DOMINION BUREAU OF STATISTICS
CANADA

SEVENTH CENSUS OF CANADA, 1931

VOLUME XII

MONOGRAPHS

THE CANADIAN FAMILY
FERTILITY OF THE POPULATION OF CANADA
HOUSING IN CANADA
ILLITERACY AND SCHOOL ATTENDANCE
THE AGE DISTRIBUTION OF THE CANADIAN PEOPLE
CANADIAN LIFE TABLES

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REPORT ON THE SEVENTH CENSUS OF CANADA, 1931

To His Excellency the Right Honourable the Earl of Athlone, K.G., P.C., G.C.B., G.C.M.G., G.C.V.O., D.S.O., Governor General and Commander-in-Chief of the Dominion of Canada:

MAY IT PLEASE YOUR EXCELLENCY:

I have the honour to lay before Your Excellency the twelfth volume of the Report of the Seventh Census of Canada taken as of date June 1, 1931. This volume contains the monographs dealing with families, fertility, housing, illiteracy and school attendance, age distribution and life tables and is based on the census with occasional use of supplementary data.

I have the honour to be,

Your Excellency's most obedient servant,

JAMES A. MACKINNON,
Minister of Trade and Commerce.

OTTAWA, January 15, 1942.

PREFACE

Volume XII of the Seventh Census of Canada brings under one cover the 1931 Census monographs dealing with families, fertility, housing, illiteracy and school attendance, age distribution and life tables. These studies, already published as separates, are based on the census with occasional use of supplementary data. They were prepared under the general direction of the late Mr. M. C. MacLean and have been arranged in this volume by Mr. A. L. Neal, Chief, Social Analysis Branch.

The remainder of the monographs—those dealing with unemployment, dependency of youth, rural and urban distribution and racial origins and nativity—will be found in Volume XIII.

The Canadian Family.—This monograph is a statistical survey of the Canadian family, past and present, through the medium of data available from censuses since 1666. The family attribute most capable of measurement is size, *i.e.*, the number of persons living at home at the time of the census. The *household* includes all the inmates of the home, while the *private family* includes only the immediate dependents of the head. While no marked trend in average household size is evident prior to 1871, the period since then has witnessed a steady decline in every region except rural Quebec.

The size of the private family is determined by two factors: (1) the size of the completed biological family, and (2) the proportion of the completed family at home. The latter is dependent on the ages of the heads, duration of marriage, and the age to which children remain at home. Consequently, fluctuations in average family size must not be interpreted solely on the basis of fertility. There can be little doubt, however, that the decline in the average size of the Canadian family since Confederation is due principally to declining fertility caused by concentration of population in cities, the trend towards indoor, non-manual and wage-earning occupations, and the commercialization of farming. The decline in the size of the rural family has been concomitant with the development of railway and highway transportation which has been instrumental in urbanizing the social outlook and economic life of the rural population. To some extent these are phases of increasing population density. Regional variation in average family size is closely associated with race and religion.

The monograph was the work of Messrs. A. J. Pelletier, F. D. Thompson and A. Rochon. The manuscript was edited by Miss E. M. Carmichael and the graphs were drawn by Mr. J. W. Delisle.

Fertility of the Population of Canada.—Owing to the short period of observation covered by the data on Vital Statistics for Canada as a whole, this study is intended to be fundamental to future studies rather than a means of arriving at conclusions about the trend and incidences of fertility. Consequently, the great part of it is a collection, arrangement and summary of facts covering this period that have not yet appeared in print. It was found necessary to draw some conclusions tentatively at least. These will be found in the Summary, page 217.

The monograph is divided into two parts. Part I dealing with the general trend of fertility and Part II with differential fertility as incidental to racial, birthplace and regional distributions.

Owing to the death of Mr. W. R. Tracey, Chapter VII and parts of the other chapters were written by the late Mr. M. C. MacLean, M.A., the general director of these monographs and by Miss M. E. Fleming, B.A., and Miss M. MacGillivray who also assisted Mr. Tracey throughout. Chapter I on completeness of birth registrations was written by Mr. N. Keyfitz. The material was prepared for press by Miss B. J. Stewart, and the charts were drawn by Mr. J. W. Delisle.

Housing in Canada.—Although this monograph is one of a series based primarily upon 1931 Census statistics, census data have been supplemented to a considerable extent by other materials, some primary and some secondary in character. The introductory historical sections have been prepared mainly from secondary sources. The entire lack of any comprehensive treatment of Canadian housing from an historical viewpoint seemed sufficient justification for

this brief review. The subsequent analysis, which is purely quantitative, has not the precision and completeness which can be obtained only from intensive surveys of housing. It is believed, however, that the comparisons and measurements which are offered should serve as a useful background for the results of more exhaustive surveys in small areas. Perspective may be obtained for problems related to such broad headings as crowding, tenure and types of dwellings.

The monograph has been planned and prepared by Mr. H. F. Greenway, M.A. Miss Marion Richards, B.A., and Mr. R. E. Moffat, B.A., have contributed materially to the preparation of the statistical analysis, and Mr. Roland Lavoie gave invaluable aid in locating much of the historical information presented. The monograph was edited by Miss B. J. Stewart, and the charts were drawn by Mr. J. W. Delisle.

Illiteracy and School Attendance.—The present study of illiteracy and school attendance is, as far as possible, supplementary to an earlier study published in connection with Census of 1921, *i.e.*, it covers new ground in all respects except in so far as it verifies and brings up to date the findings of the earlier study. The main difference between the two is that the 1921 monograph portrayed illiteracy and school attendance from the point of view of the educationist as a technologist, the present monograph from his point of view as a sociologist. The two studies, then, are in most respects two parts of one study.

The conclusions of the present monograph are that census data on illiteracy and school attendance, while valuable as descriptive of and measuring the conditions and progress of these attributes as such, are still more valuable as measures of symptoms of social phenomena which are not directly measurable. In other words they measure the population conditions which determine the status of illiteracy and school non-attendance but which also determine other statuses, a more important matter than measuring the influence of illiteracy and school attendance upon the population. The two attributes are symptomatic of a *class* different in several respects from the class possessing the opposite attributes. The attendant evils of illiteracy are not removed by the removal of illiteracy. Its cause must also be eradicated, and this cause has many anti-social effects in addition to illiteracy.

The study is divided into two parts, the first (Chapters I-V) dealing with illiteracy and the second (Chapters VI-X) with school attendance. Part III is devoted to basic tabular material to which the reader is referred throughout the text. The summary of the whole coming before these parts is consistent with the general plan of the series of monographs and will be found useful to the reader who is more interested in the findings than in the arguments on which they are based. The study was carried out under the direction of the late Mr. M. C. MacLean by the staff of the Social Analysis Branch of the Dominion Bureau of Statistics, Miss E. M. Carmichael of that Branch directing the preparation for press.

The Age Distribution of the Canadian People.—This study deals first, in Chapter I, with the evolution of the Canadian age distribution from 1881 to 1931. By a method of fitting dealt with in the Appendix, it is found that the age distribution progresses in such a way that higher and higher degrees become important when the different years are fitted with complex exponential curves.

A classification is then made, in Chapter II, of the 220 counties and census divisions of Canada in 1931. For the purpose a threefold age index is used. This index defines the age structure by means of the percentages under 25 years of age and 65 years of age and over and a quantity called "standard age." In Chapter III, functional aspects of age distribution, the most important of which are taken to be percentage born in province of residence, age of settlement and resident death rates, are discussed and their relation to the previous classification by age structure is shown.

In Chapter IV, the study considers the age structure of cities of 5,000 population and over. Eight of these are selected and subjected to a special analysis for the decades 1911-21 and 1921-31, in order to determine the effect on age structure in urban centres of movement as opposed to that of death and ageing.

The monograph was written by the late Mr. M. C. MacLean, M.A. The charts were drawn by Mr. J. W. Delisle and the manuscript was prepared for press by Miss B. J. Stewart.

Canadian Life Tables.—In this volume are published the first Canadian Life Tables issued under offieial imprimatur. The Registration Area of Canada was extended to include the nine provinces only in 1926; previous to the 1931 Census, therefore, no national Life Table could bc construeted, using, as is now the almost universal praetiee, deaths of the three years about the census date.

As the figures of deaths for the Yukon and the Northwest Territories are not on the same eomprehensive basis as those of the nine provinees, they were not ineluded for the purpose of these tables.

Life tables are popularly associated with life assurance, but this is only one of their many uses by statisticians, soeiologists, medical health offieers and the population at large. Age structure and mortality eontain so many different elements whieh are important in themselves that a single average sueh as mean age or a single mortality rate (even when standardized) is inadequate for purposes of deseription or investigation, the attributes of eaeh year of age in relation to the other years being essential.' The most suitable vehiele for the presentation of the mortality attributes of age is the life table.

The tables that follow are diseussed in a general way in the aecompanying text. Among points referred to are (1) the considerable differenees in mortality between the sexes; (2) the differenees between Canada's regional divisions, whieh exist most markedly at the middle ages of life; (3) diffcrenees between Canada on the one hand and England and Wales and the United States on the other, Canada showing on the whole a considerably lower mortality; (4) a eomparison of mortality in the Registration Area of 1921 (*i.e.*, Canada exeluding Quebee) with mortality for the same area in 1931, showing a definite deeline in mortality rates at all but senile ages. The last point seems to indicate that the improvement in mortality is not by way of lengthening in old age the bridge of life referred to in the vision of Mirzah, but rather of making safer thc march along its span.

The tables have been prepared by Mr. N. Keyfitz, B.Se., Mr. P. F. Keyes and Mr. C. E. Kraemer assisted in the numerieal eomputation, and Miss E. M. Carmiehael edited the manuscript.

R. H. COATS,
Dominion Statistician.

January 15, 1942.

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	Pictou	13
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	Madawaska	7
	Northumber-land	8
	Queens	9
	Restigoucbe	10
	St. John	11
	Sunbury	12
	Victoria	13
	Westmorland	14
	York	15
Quebec	Abitibi	1
	Argenteuil	2
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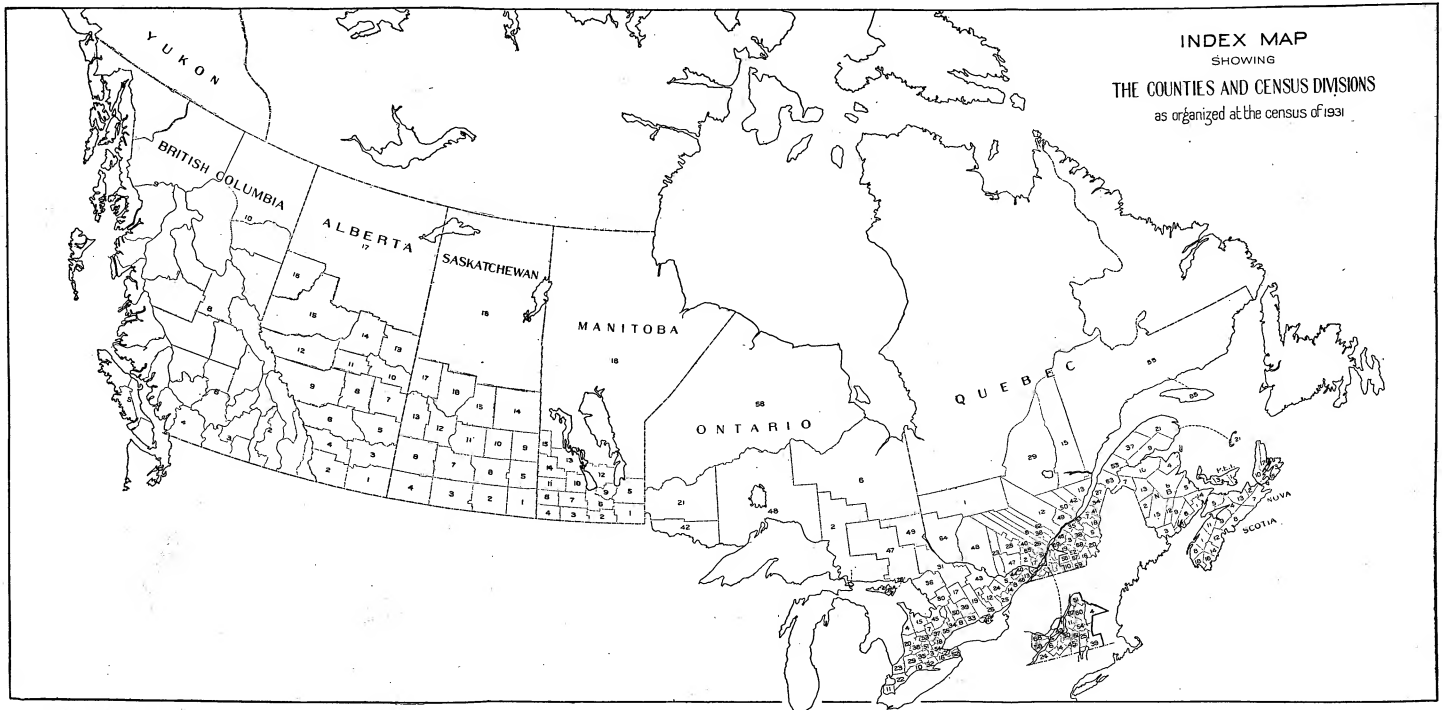
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BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
NOVA SCOTIA

THE CANADIAN FAMILY

by

A. J. Pelletier
F. D. Thompson
A. Rochon

SUMMARY

EARLY HISTORY OF THE CANADIAN FAMILY

From 1608, date of the first successful attempt at colonization, to 1666, date of the first census, the population of Canada progressed very slowly: it numbered 28 souls in 1608, 274 in 1639, and 3,215 in 1666. Fifty years after the arrival, in 1617, of the first Canadian family, consisting of Louis Hébert, his wife and their three children, the Census of 1667 registered only 668 families. Except for the period 1665-72, when Louis XIV became interested in colonization, immigration under the French régime was practically non-existent.

Acadia, although left to itself, made good progress until 1755, when the expulsion from Nova Scotia took place. From 1755 to 1763, 14,000 persons were deported, of whom a large number perished in their incessant journeys. Not only was the mortality rate very high, but the birth rate in such circumstances was greatly reduced, with the result that in 1787 the Acadian population (in and outside Acadia) numbered only 12,000. It had reached nearly 18,000 in 1755.

The slow growth of population in New France is understandable when it is remembered how neglected the colony was by the mother country, how long and hazardous was the crossing of the immigrants, and how serious were the dangers with which they were surrounded. It took great courage under these conditions to settle in Canada and courageous indeed were the immigrants who took that course, whether their motives were flight from the wars of religion, desire to bring Christianity to the native, ambition to assure the future of their children, or taste for adventure.

Two publications, *Relations des Jésuites* and *Histoire véritable et naturelle des mœurs et productions de la Nouvelle-France*, together with two agencies, the companies and the seigneurs, played a large part in promoting the settlement of New France. The colonists who were induced to come by these means and whose settlement was facilitated can be divided into a small number of families, single men, *engagés* or soldiers, and single young women, *filles du roi* or peasant girls.

The young Canadian family, as established all along the north shore of the St. Lawrence river by 1667, was practically self-supporting: for its food it could rely on its crop, a few cattle and chickens, hunting and fishing, while home-grown hemp and flax provided the necessary material for *l'étoffe du pays*. The obstacles to expansion were many and serious—the massacres by the Iroquois, the ravages caused by epidemics, and the desertions of the *coureurs-de-bois*. These, however, could not stop progress, since their effects were opposed by the high birth rate that goes with early marriages in a young and healthy population. The life of the colonists, if it was a rugged one, was by no means dull and gloomy; celebrations were held on many occasions and Canadian social life dates back to the very first days of Canada.

SIZE OF THE CANADIAN HOUSEHOLD, 1666-1931

The period 1666-1931 is divided into two parts, with a large gap intervening, due to the fact that censuses from 1739 to 1851 do not give the number of households. In the first part, the average household size is above 6 persons from 1681 to 1730. The second part starts with 6·18 persons per average household in 1851, which increases to 6·29 in 1861 (this being the highest average ever attained for the country as a whole) but for 1871 and subsequent censuses continued, though irregular, decreases were reported. These variations are attributed to movements of population, whilst the broad regularity of the trend of the decrease is due to constant factors, such as declining birth rate, ageing of the population, greater proportion married and urbanization.

Urbanization in Eastern Canada has been rapid and continuous since 1871. Not only did urban centres grow at the expense of rural areas but the average size of the urban household experienced a smaller drop in these latest sixty years than did the average size of the rural household, which, however, remained higher than the former at each census.

Interesting comparisons may be made regarding the average size of the household, rural, urban, and general, in the Eastern Provinces for the last sixty years. Among others may be mentioned: a smaller household size in 1931 than in 1871 is recorded for each of the five provinces; the smallest drop in average household size for the entire sixty years is shown by Quebec; the lowest average household size at every census is in Ontario; etc., etc.

The average size of the rural household in the province of Quebec has been increasing since 1901. A study by counties made for the decades 1901-11 and 1911-21 shows that it was really a general increase and not one due to the influence of a limited number of counties having abnormally large households. Moreover, it shows conclusively that racial origin is an important factor in determining the average size of the household.

RECURRING LARGE AND SMALL DECREASES IN HOUSEHOLD SIZE IN EASTERN CANADA, 1871-1931

The average size of the Canadian household from 1871 to 1931 was influenced by a number of factors. One of them, however, stands out among the others as being responsible for the alternate large and small decreases registered during the last sixty years, *viz.*, the population movement. The points of agreement as well as of disparity in all six decades, when compared minutely, reveal that the larger decreases in the size of the household are identified with the movement from the older into the newer counties, whereas the smaller decreases are related to the movement to the West and the United States, and especially with the invasion of urban centres by immigration and the movement of native rural population.

These results are quite logical for the following reasons: (a) the movement from thickly populated to newly settled counties was, on the whole, made by members of small families who, because there was no more room for expansion in the old counties, had to look outside for their own maintenance. Now, when young Canadians went West or passed over to the United States, they decreased the size of the household in Eastern Canada, but, when they left for newly settled counties the effect was to decrease it doubly, for, besides reducing the number of large households they also increased the number of small households; (b) the citywards movement created a large increase of population in the urban centres, but did not create a corresponding increase in households, a fact which, naturally, retarded the decrease in the average size of the household. The increase in households did not keep pace with the growth of population because a large proportion of the population, foreign or native, invading the cities was made up of single young men or young women who for the most part took up rooms in private families or in boarding houses; (c) except for very special periods, Canada could absorb but a small fraction of its immigration, and in certain decades only one out of twenty or even one out of thirty-five immigrants remained in Canada. Their emigration, coupled with a movement of native rural population to new rural areas instead of to cities, would produce a large decrease in the average size of the household.

Concluding from past experience one may say that the average size of the Canadian household will, in all probability, go on decreasing, but the decrease should get smaller with each decade. Perturbing factors which have operated in the past—large immigration, mass settlement, too rapid industrialization—are not likely to repeat themselves. The rural household may even increase in size, as it did for Quebec and New Brunswick in 1931, now that the new counties have passed the initial stage of settlement. On the other hand, further decreases, although smaller ones than those registered so far, should be expected for the average size of the urban household, for modern city life undoubtedly thwarts the normal expansion of families and households.

THE TYPICAL HOUSEHOLD IN MONTREAL, TORONTO AND WINNIPEG

Since so much of this monograph is devoted to a discussion of average household size, it is necessary to determine with what accuracy the average measures that size. First, does the average indicate size in such a way that the foreigner, anxious to know something of family structure in Canada, would get a fair picture by a study of the average? Investigation is confined to the cities of Montreal, Toronto and Winnipeg, since the number of households by size has been compiled only for these three cities. In each city the most commonly occurring or modal household consists of 3 persons while the average persons per ordinary household* is 4·60 in Montreal,

*Ordinary households do not include hotels, rooming houses, institutions, camps, tents and similar extraneous types.

4·10 in Toronto and 4·37 in Winnipeg (see Statement XXVIII, Chapter IV, page 48). Due to their larger size, certain groups of households above the modal size, *viz.*, those with 5 persons in Montreal and those with 4 persons in Toronto and Winnipeg, contain the greatest number of people. Now it will be noted that these sizes are the integers nearest to the average persons per household in each city. Apparently, the average, instead of indicating the size of the modal household, indicates the size of the household containing the most people. It does, however, provide a useful measure of standard household size.

Secondly, to what population phenomena is average household size most sensitive? This is a very important point since, in the analysis of material available from past censuses and from the present census for small subdivisions of the population, it is necessary to draw conclusions concerning family size and composition from averages without the knowledge of other numerical indices. Average household size is considerably larger in Montreal than in Toronto but investigation reveals that the difference is almost entirely due to differences in the proportions of households with 6 or more persons. Since only one-fifth of the Montreal households are of such sizes, it is clear that a small group of large families has a pronounced effect in determining average persons per household. The difference between the average persons per household in Montreal and Toronto is considerably smaller than the difference in the average sizes of normal households of one family with husband and wife living together as heads, the reason being that there are more households with two or more families in Toronto. Factors other than children per family, therefore, have an important weight in determining average household size and for this reason it is not a reliable measure of fertility. This must be borne in mind when studying average household size as derived from earlier censuses where the households were of very heterogeneous types, some, for example, being penitentiaries with several hundreds of inmates.

A consideration of the size distribution of households raises the question as to how size of house varies with size of family. Since the correlations between persons per household and rooms per household are very low in each city, it is apparent that the housing question is largely a problem of distributing the available accommodation and not of providing more. Overcrowding results to a pronounced degree from large families living in small houses while the smaller families are occupying the large houses, and the building of a large number of new houses would do little to decrease overcrowding unless the new accommodation went to those most in need of it. Differences of opinion as to when a household is overcrowded most certainly arise but in studying census data an overcrowded household may be best defined as one where there are fewer rooms than persons. On the basis of this definition most of the households in Toronto consisting of 7 or more persons were overcrowded. It is most significant that approximately one-half the overcrowded households, containing two-thirds of the people living under crowded conditions, had 7 or more members (see Statement XXXIII, page 54, Chapter IV). Consequently, the provision of adequate room for large families can scarcely be accomplished by building small low-cost houses; although it is true that conditions in large households in Toronto in 1931 were aggravated by the fact that very often more than one family was living in the household and lack of privacy was very keenly felt. It might be that a considerable proportion of these households would split up if it were possible for the constituent families to obtain small cheap dwellings but it must not be assumed that they would do so. The head of a large family of children earns no more than the head of a small family and he obviously cannot afford the larger house which he needs. His position can be remedied, not by subsidizing the construction of small houses, but only by subsidizing his income in proportion to the size of his family. Then he can rent, heat and furnish the large house which he requires and which is available at present. Many parents may avoid overcrowding by limiting the size of their families. In this connection it is significant that wage-earners have smaller families than employers and "own accounts" which may be attributed to complete lack of flexibility of their incomes with size of family. Limitation in family size for many people is the only alternative to poverty and misery.

LODGERS

There were 555,606 lodgers in Canada in 1931 of whom 89·29 p.c. lodged in ordinary households and the remainder in hotels, rooming houses, institutions and camps. The high proportion of lodgers living in rural parts of Canada who lodged in households where they were the sole lodgers (61·9 p.c.) is readily explainable since, being scattered, they had to lodge apart, but it

is most significant that 38·4 p.c. of the urban lodgers lived in households where there was only one lodger (see Statement XXXV, page 56, Chapter V). Adding the percentages of urban lodgers living in one-lodger and two-lodger households it is found that 58·2 p.c. lived in households where there were not more than two lodgers. This tendency for lodgers to live in small households where they may enjoy maximum home privileges would seem to indicate that Canadians are a home-loving race, especially in view of the fact that comparison with United States figures reveals a lesser tendency there. The rooming-house population is largely composed of floating elements of foreign races, particularly the Chinese and Japanese, while the typical Canadian lodger seeks a private home.

Since so many lodgers are found in private homes, it is interesting to determine the types in which they most frequently are found. Examination reveals that tenants take in lodgers more frequently than do home-owners (see Statement XLIII, page 61, Chapter V). Since data relating to households with lodgers were very meagre it has been necessary to resort to correlation analysis. The households dealt with in the analysis are a homogeneous group, *viz.*, those of one family with tenant wage-earner married male head living with his wife and paying at least ten dollars and less than sixty dollars for monthly rent. The average number of lodgers per household has been correlated with four factors, *viz.*, rent per room, children per household, persons per room and earnings per person (see Statement XLV, page 62, Chapter V). From these correlations the following inferences may be drawn: lodgers prefer rooms of good quality as measured by the rent paid for the houses in which they lodge; they avoid overcrowded households; they avoid children only in so far as the children monopolize the available accommodation and they are more common in families whose earnings are above average than in families with low earnings, since the former families can provide the most suitable accommodation. The keeping of lodgers, therefore, can seldom be resorted to as an amelioration for poverty.

THE HEADS OF PRIVATE FAMILIES

Since the household does not coincide with the popular concept of family, most of the tables compiled from the 1931 Census are "private family" classifications. The private family includes the head and his dependents but excludes servants and lodgers. Often a household may be subdivided into two or more families, an example being the household where a married son and his wife live with his parents. It should be remarked that, with the exception of a few compilations of the 1921 data, private family compilations are not available from previous censuses. Of all private families, 86 p.c. show husband and wife living together and these have been defined as *normal* private families. The average Canadian family head first assumes family responsibilities at the age of 26·7 years after which his family responsibilities steadily increase until he is above 45. Although the wage-earner's earnings increase concurrently, they do not keep pace with his dependents which proves an incentive for limiting the size of his family. The ages 35-54 may be termed the ages of maximum family responsibility and of maximum economic fitness. The earnings of the average wage-earner decrease after the age of 55 but his children have then become self-supporting so that it is probably the most comfortable period of his life. It is apparent that the age distribution of the heads of a group of families will have a very important bearing on the family attributes, size, composition, earnings, etc., of the group. Unfortunately there is a conspicuous lack of essential data relating to the ages of heads in the family tables of the 1931 Census. An index has been devised to measure the concentration of married males in the middle ages in different parts of Canada (see page 68, Chapter VI). In almost every region the concentration is greater than it would be for a stationary population (*i.e.*, one increasing neither by natural increase nor by immigration) but it is greatest in the cities of 30,000 and over and least in the country villages and in the rural parts of the Maritime Provinces. Consequently, the favourableness of the age distribution of the married population of Canada to a high birth rate is offset considerably by the fact that it is largely confined to regions in which economic pressure and the mode of living tend to restrict births. Concentration in the large cities results from the importation of workers at the fittest ages from the small towns and rural districts and from outside Canada. As soon as these cities cease to grow, concentration may be expected to decrease. At present, a city population is very much a working population but, unless the workers leave the city when their working days are over, this will not always be the case. In the future there will be a higher proportion of aged family heads to be supported by pensions payable from taxation borne by a smaller proportion of persons at working ages.

CONTRIBUTION OF ADULT DEPENDENTS AND GUARDIANSHIP CHILDREN TO FAMILY SIZE

Because they seek lodging in private homes with adequate accommodation, it is probable that lodgers tend to lessen the dispersion in household size by enlarging small families. Do undersized families likewise take in guardianship children and adult dependents more frequently than those of average or large size so that the dispersion in household size is again made smaller? The average number of guardianship children is largest in families with heads under 25 and over 55 years of age, *i.e.*, when own children are least numerous (see Statement LXVI, page 79, Chapter VII). This results from the fact that many guardians are grandparents, uncles or aunts and brothers or sisters. The families of all these types of guardians, exclusive of their wards, would probably be quite small so that guardianship children probably do lessen variation in family size. Dealing with guardianship children, it is interesting that there are 4·33 living in private families to every 1 living in an institution. Since 71·06 p.c. of those living in private families are related to the head and 21·14 p.c. are adopted, it would appear that the family functions quite efficiently in the care of orphaned and neglected children.

Middle-aged heads of families most frequently support adult dependents. This is probably because they are financially most able to do so since adult dependents, as a rule, contribute no money. This is only true, however, if the family is small, since otherwise the earnings of the head will not be sufficient for the whole family and the inclusion of an extra dependent will overtax the already limited accommodation in the home. Therefore, adult dependents probably help to bring small families closer to the average size. It must be noted, however, that dependents sometimes create small extraneous families with unmarried heads.

The number of guardianship children per normal family with wage-earner head decreases with increasing earnings while the number of adult dependents increases (see Statement LXXII, page 84, Chapter VII). Poor wage-earners evidently do not hesitate to shelter orphaned children of their own kin even though it entails real hardship. The high average number of guardianship children in families with heads in the low earnings class is partly due to the fact that so many guardians are grandparents who have passed the age of maximum earning power.

Both guardianship children and adult dependents are more numerous in the Maritime Provinces than in the rest of Canada. In addition, they are not very common to the large cities so that it would seem that they are characteristic of an indigenous population.

THE CENSUS FAMILY AND THE COMPLETED FAMILY

The census measures only the number of children living at home at the time so that the average census family is much smaller than the average completed family. By asking each married woman the number of children born during her present marriage, the ages of completed families of women who have passed the child-bearing age have been determined by enumeration in censuses conducted in many countries. This question has never been inserted in the Canadian census schedules for several good reasons which will not be discussed here. It is the sizes of completed families of the active women (15-45) which are of immediate interest and these can only be predicted. The method used in this monograph has been to base an estimate on the order of births for 1931 given in the Annual Report on Vital Statistics for the year. The order of a birth gives the number of children the mother has borne. The method is reviewed in detail in Chapter VIII. The average number of children to be borne by women now 15-50 who will both live through the child-bearing period and marry before its close is estimated at 4·01. Some of these women, however, are separated from their husbands prematurely by divorce, separation, or death. Large families make a much greater contribution to the population than is generally realized. Although families of 10 or more children form only 10·5 p.c. of the total number of families they contain nearly one-third of the children. It should be remarked that stillbirths are included in estimating the size of the completed family and, although they represent a small percentage of the total births, they may increase the sizes of a considerable proportion of the large families. Our entire natural increase in population is made possible by the families of 9 or more children which constitute 13·9 p.c. of the total number of families. This is because the smaller families only make up for the ground lost by the sterile couples, those producing but 1 or 2 children, and the people who do not marry or who do not live to reproduce themselves. The

large family is apparently essential if we are to have a natural increase in population and its disappearance can result only in cessation of population growth or even retrogression.

A table was drawn up cross-classifying completed families and census families according to size (see Statement LXXXVIII, page 98, Chapter VIII). This enables one to visualize the correlation between the sizes of families at the time of the census and their completed sizes.

OCCUPATIONS AND EARNINGS OF FAMILY HEADS

Stated earnings of Canadian wage-earners for the period June 1, 1930, to June 1, 1931, totalled $2,100,552,700 of which $1,340,546,400 or 63·82 p.c. was earned by heads of families and $11,426,350 or 0·54 p.c. by wives living with their husbands. Consequently, the great bulk of wages are earned by heads of families while their wives earn only an insignificant fraction. Total earnings of female heads of families were three times the total earnings of wives living with their husbands while total earnings of children living at home were nineteen times the total earnings of wives (see Statement LXXXIX, page 99, Chapter IX). Little significance can be attached to the average earnings of heads of other than normal families since they cover very heterogeneous groups. Considering the extra services which a woman is able to provide her family it would seem that female heads looked after their dependents as well as did unmarried male heads.

The average earnings of heads of normal families was $1,211 for 1930-31. This average has a particular significance in that it gives the wages that would accrue to each head if total wages were equally distributed. Obviously they would not enable him to maintain a very high standard of living especially if his family were large, although he could avoid extreme poverty. The average gives a fair measure of typical wages. The class "$950 and less than $1,450" is the modal wage-earning class and includes 26 p.c. of all heads of normal families earning 25 p.c. of the total wages of heads of normal families. Those who advocate an equable distribution of income for all must regard this class as their ideal. Of the married heads of families, 44 p.c. earned less than $950 in 1930-31 while 29 p.c. earned $1,450 or more. However, many of those in the former group may have other sources of income, such as a free house, or they may be part-time wage-earners, such as farm labourers and fishermen, who, when not working for hire, cultivate their own small farms.

There is no marked variation in average size of family with earnings of the head since, although heads of families in the low earnings classes have slightly larger families than heads in the better earnings classes, the trend is irregular (see Statement XCIV, page 103, Chapter IX). Children under 7 years of age are most numerous in families with heads in the low earnings classes, approximately one-half of the young children of wage-earners belonging in families where the head earned less than $950. This is obviously because the heads with young children have not yet reached the peak of their earning power and would be most liable to unemployment in 1930-31, a year of extreme depression. On the other hand, children 15 years of age and over per family steadily increase with increasing earnings of heads, indicating that the heads in the earnings classes are older and also that they are able to keep their children at home. Children old enough to work who are living in poor families generally do so while those living in families with heads in the higher earnings classes do not. Evidently the latter only work when they can secure highly remunerative employment since their average earnings are much higher than the average earnings of the former. Similar observations may be made with regard to the proportions gainfully occupied and the average earnings of wives. It is quite clear that the poor families are a source of supply of cheap adolescent and female labour. Earnings of children living in families with heads in the low earnings classes were almost one-half the earnings of the heads so that they represented a large share of the family income. Evidently the family can cope with the crisis of unemployment better than the individual since the burden can be shared by the several members. It is the family with young children that would appear to suffer most when the head is unemployed. Day nurseries in the large cities are useful in that they relieve the wife of the unemployed man of her maternal duties in order that she may earn.

Occupation serves as a useful measure of social class since it is our best criterion of the individual's training, education, social background and environment. Data relating family size and composition to occupation of head are available for the normal families of wage-earners. For 135 of the occupations (all those with 1,000 or more family heads), average persons per family

has been related to five attributes of the occupation. The first is average earnings of family heads, 1930-31; the second, percentage of families living in cities of 100,000 and over, a measure of urbanization; the third, percentage of gainfully occupied of British racial origin, a measure of racial content; the fourth, average earnings of wage-earners 25-34 years of age as a percentage of average earnings of those 45-54, an index of delayed earnings; and the fifth, percentage of wage-earners 34-54 years of age, a measure of age distribution of family heads.

The standard deviation in the averages for the 135 occupations was 0·35 persons per family indicating that average family size varies considerably with occupation of head. The occupations were grouped in seven types according to nature of work, *viz.*, A, outdoor—heavy manual; B, indoor—heavy manual; C, outdoor—light manual and supervisory; D, indoor—light manual and supervisory; E, officials, managers, salesmen; F, professional and clerical; G, personal service.

Family size is very closely associated with type of work, outdoor and manual workers having much larger families than white-collar men. This is further proof that man tends to reproduce less and less as his environment becomes more artificial. Occupation measures environment and mode of living. These differ for the white-collar man and the outdoor worker and, in addition, the outdoor occupations are largely confined to the rural districts and the indoor occupations to the large cities.

The multiple correlation between average family size and the five occupational attributes mentioned above was ·75 indicating that 56 p.c. of the variance in the averages is associated with these five factors; 25·4 p.c. is associated with urbanization; 13·9 p.c. with average earnings of heads of families; 10·2 p.c. with racial content; 5·5 p.c. with age distribution and 0·5 p.c. with delayed earnings. Urbanization is, therefore, the most important factor causing variance in family size between occupations. On the whole it would appear to be a much more important factor in determining family size than occupation itself. An analysis of the variance in the averages for children per family for forty-six occupations and five rural and urban groups in the province of Ontario reveals that mean variance between rural and urban groups is twice that between occupations. Urbanization evidently has a more important bearing on family size than social class as measured by occupation. It would appear that, for each occupation, the average sizes of city, town and rural families differ, but in each case the city family is smallest and the rural family largest. The centralization of industry in large cities and the movement out of small towns is evidently an important cause of declining family size. From a population viewpoint it is not the existence of vast industrial organizations which is to be deplored but their concentration in a few large cities. It cannot be said that people who fail to reproduce themselves are living under satisfactory conditions. The fear of unemployment, the struggle to "keep up with the Joneses," lack of fresh air and freedom of movement and insufficient housing accommodation all tend to inhibit the reproductive instincts of city dwellers.

A special tabulation has been made of the vital statistics data giving the average number of living children born to the mothers of 1931 by occupation of father. The correlation between these averages for fifty-two occupations and the averages for dependents per census family with heads in the same occupation was ·82. Considering the various reasons why the vital statistics data are not strictly comparable with the census data, it is surprising that the correlation is so high. It points to the reliability of vital statistics data as a source of information for studies of differential fertility and also indicates that the differences in census family size from occupation to occupation result largely from differential fertility.

It is for only a limited number of occupations that there are sufficient families in each province to render averages significant. In a study of the ranking, according to average family size, of forty-two of the largest and most homogeneous groups by provinces it is found that some maintain a similar ranking in each province while for others the ranking varies. Railway sectionmen and fishermen have relatively large families in every province while compositors and printers, professional engineers, salesmen, accountants and auditors and clerks have relatively small families. On the other hand, the rankings of miners, cooks and clergymen differ widely between provinces. Since the gradation in family size from province to province is similar for the majority of occupations it would appear that occupational content does little to account for dispersion in family size between provinces. For example, the small family in British Columbia cannot be accounted for on the basis of occupational content since, for thirty-four of the forty-two occupations, families are smaller in British Columbia than in any other province.

The correlations between average earnings of heads and average earnings of children living at home for the forty-two occupations are higher in the Eastern Provinces than in the Western. This might be taken as evidence that Canadians are being progressively regimented into an occupational caste system as the nation becomes more developed and economic growth slows up.

From a consideration of family size for broad occupational groups, it is found that rate of increase varies widely between occupations. Family heads engaged in trade, finance and insurance, professional and personal service and clerical occupations are scarcely reproducing themselves. These groups would appear to include the best and poorest elements of the population. As the population grows they must draw on other occupations for their recruits so that there is a tendency for the increase of those elements of the population of greatest and least economic and social fitness to be cut off. Since it is the average man who is most prolific, the national stock is improving when the greater increase comes from the classes slightly above the average and deteriorating when it comes from those slightly below. In studies of differential fertility it is possible that too much attention is often directed to the extreme classes. A high rate of increase among imbeciles and idiots may create a problem in that their progeny will tax the accommodation of asylums. It does not necessarily follow that it results in racial degeneration of serious import.

THE FARM HOUSEHOLD

Agriculture is the only major industry in which the household has remained the producing unit during the past years of economic change. There has been, however, a continuous decrease in farm self-sufficiency with the result that the farm family has become dependent on outside sources for a growing proportion of its living requirements. It has, therefore, become more susceptible to the vicissitudes and uncertainties of world commerce and this has had an important effect on its size and composition. In those countries of Eastern Europe where, although life may be hard and living standards low; the farm family is self-contained, producing almost all its own needs and selling only the surplus, large families are still very popular. Children present little additional burden to the farmer and almost from infancy are valuable for the work they do. To the modern farmer, however, children are a definite liability since he must buy clothing, school books and even some food for them while they are of little assistance in the specialized production of farm products. This is particularly true of the grain farms in Western Canada.

Farm population as distinct from the rural population was counted for the first time in 1931, but the steady drop in the average size of the Canadian rural household since 1871 and other reliable indicators point to a continual decline in the size of the farm household. Changing types of farming in the East and the emphasis placed on production for sale from the very first in the West are the underlying causes of this decline. It might be added that the changes have been greatly facilitated by the development of railway and highway transportation.

The farm family is still self-sufficient in many respects, however, since milch cows, poultry and swine are found on the great majority of farms throughout Canada (see Statement CXVI, page 129, Chapter XI). It is significant that 51·8 p.c. of the Canadian farmers keeping milch cows have only from one to four in milk or in calf. On the basis of percentages of farmers keeping milch cows, sheep, swine, poultry and bees, Quebec and Prince Edward Island farms are the most self-sufficient, and British Columbia farms the least so.

Quebec presents an extremely interesting field for a study of variation in average family size between counties since in fifty-six of the sixty-six counties the population is homogeneous in race, religion and culture. In other provinces the incidence of such factors tends to obscure the importance of economic and physical factors in determining family size. In Quebec, density of population and farming practices differ from county to county, which evidently accounts for the variation in average size of farm household. Considering only the fifty-six homogeneous counties, the average varies from 7·80 persons per household in Chicoutimi to 5·14 in St-Jean. Farm households are largest in the counties north east of Quebec city and bordering the St. Lawrence River below it and smallest in those south of Montreal (see Map I, page, 136 Chapter X). This shading off in average household size as one passes from district to district is closely associated with growth of rural population and population density. In those counties where the averages are large the population has been growing steadily, due to the absorption of a large natural increase, while in the counties where they are small, the natural increase has been smaller and has emigrated. Increasing density of population acts to make the average smaller since

the birth rate decreases, children tend to leave home earlier and eventually the middle-aged population is depleted, leaving a large proportion of old heads with small families.

Population depends on the number of families and their average size. It would appear that as the population in a county approaches an optimum the average size of the families becomes smaller so that population growth ceases. At the same time, the average family may be small in sparsely settled counties. For example, in Abitibi county density of population is low and the rural population is rapidly increasing but the average size of the farm household is comparatively small. The explanation, of course, is obvious; the population increase is due to colonization by outsiders with the result that most of the families are new and small, many of the heads being unmarried. Since the birth rate is very high the average size of the household will probably increase as families become completed.

The farms in the counties with large households are more self-contained than those in counties with smaller households. Permanent and temporary hired labourers are less common on the large-family farms since the farmer can draw on his family for help in the busy seasons. Stock slaughtered on the farm are generally intended for home or local consumption while stock sold alive are for outside sale. Consequently, the ratio of total stock slaughtered to total stock sold alive provides an index for measuring the farmer's concern with production for home use as opposed to production for sale, *i.e.*, for measuring the degree to which farms are self-contained. It is interesting that average size of farm household correlates with this index.

In Nova Scotia the average farm household is largest in Inverness, Halifax and Cape Breton counties which surround the cities of Sydney and Halifax. In all of the Eastern Provinces the average farm households are generally comparatively large in the counties in the vicinity of the large cities. Due to the ready market for produce, the farm can support more people in these counties. Obviously, increase in farm population in a district often depends on increase in urban population.

Interesting features of the rural population of Nova Scotia are the two *blocs* of Acadian French, one in Inverness county and one in Yarmouth and Digby counties. There is also an Acadian *bloc* in Gloucester, Kent, and Westmorland counties in New Brunswick. The average Acadian farm household is smaller than the French-Canadian farm household in Quebec but the difference would appear to result from economic causes. Farms occupied by Acadians in many cases are so small that large families cannot be supported.

The average farm household is smaller in Ontario than in any of the Eastern Provinces due to the religious and racial content of its population and also to the continual movement of workers to the cities resulting in a depletion of the middle-aged population. Of the farm operators in Ontario in 1931, 26 p.c. were 60 years of age or over. The average farm household is largest in Nipissing county and smallest in Kenora county, both of which are in Northern Ontario. Nipissing showed a moderate increase in rural population during the decade 1921-31 which probably resulted from absorption of the natural increase while Kenora showed a much larger percentage gain, obviously the result of immigration from outside the county. The very small average household in Kenora (3·74) reflects the presence of many small new families. It is an example of the newly settled locality where families are small since they are nearly all incomplete and there are many bachelors. The birth rate is high, however, responding to the room for population growth and the average can be expected to go from low to high during the next twenty years. Nipissing was probably at this stage in 1931. After reaching a maximum the average will decrease as the heads age and families break up.

While the birth rate is high in those counties of Ontario where average farm income is low, children stay at home longest in counties where income is high. In the latter counties the average size of the farm household is increased somewhat by the presence of farm employees.

In 1931 the farm household was larger in Manitoba than in Saskatchewan and Alberta and the difference was quite general since in six of the sixteen census divisions in Manitoba the household is larger than in any county in Alberta while in fourteen of the seventeen census divisions in Alberta it was smaller than in any census division in Manitoba. This does not result from a higher birth rate in Manitoba since the birth rate was higher in both Alberta and Saskatchewan. Manitoba was at the stage of settlement when average household size reached a maximum while Alberta and Saskatchewan had not yet arrived at this stage. The average size of the farm household in the Prairie Provinces in 1936 is available from the quinquennial census and our contention is borne out by the fact that the Manitoba average commenced to

decrease during the five-year period 1931-36 while the Saskatchewan average remained practically constant and the Alberta average increased. The drought did not have any marked effect on the averages in the census divisions most affected, indicating that the exodus was one of families rather than of individuals. It is very interesting that there is no correlation between standardized birth rate and average persons per farm household for the census divisions of Saskatchewan and Alberta. Population movements had such an important bearing on average household size as to obscure the incidence of fertility. In the census divisions where average household size was above that for the Prairie Provinces as a whole in 1931 there was usually a decrease during 1931-36 while in those where average household size was below the general average in 1931 there was usually an increase during the subsequent five-year period. Consequently, average household size appears to fluctuate about a general mean. One might expect the type of farming most typical of a census division to have a considerable bearing on the average size of its farm households since some types support larger families than others. However, this does not appear to be the case.

Two factors contribute towards the small average size of the rural household in British Columbia—only 32 p.c. of the households are on farms and the average farm household itself is much smaller than in any of the other provinces. The small farm household is typical of nine of the ten census divisions. It is smallest in the northern divisions but, since they contain only a small population, they do not have much effect on the weighted mean for the province. It is the small average size of the farm household in the vicinity of Vancouver and Victoria where one-half of the farms are found that makes the provincial average small.

REGIONAL DIFFERENCES IN FAMILY SIZE

In Chapter XI variation in the number of children per family is reviewed for thirty-five regions of Canada, *viz.*, the rural and urban divisions of the nine provinces. The proportion of large families is highest in the rural parts which tends to considerably increase the average children per family while cities of 30,000 and over have very few large families with the result that the average is small. The distribution of families according to the number of children for the urban 1,000-30,000 group most closely resembles the distribution for all groups, although large families are not so frequent as in the total distribution. The urban-under-1,000 group is featured by a high proportion of childless families and relatively small proportions of families of medium or standard size, a result of the age distribution of the heads. These observations are made after consideration of the data for all Canada but they hold for most of the individual provinces as well. It is obvious, therefore, that the rural and urban distribution of the population has an important bearing on the size distribution and average sizes of families for the whole province.

The age distribution of heads reduces average family size in the Eastern Provinces and increases it in the Western Provinces. The effects of age distribution of heads on average family size are easily apparent but they are small.

Race and religion are also important factors determining average family size. Probably most of the variation in the averages between provinces results from differential racial and religious population content, and so important are these influences that they entirely obscure the incidence of less potent factors.

Population movements, where they have existed to any considerable extent during recent years, affect average family size. An indigenous population has larger families than a moving population. This is because the man who moves into a district to settle often lives alone and does not marry until he is in a position to do so. Since he marries late his family is small even when completed. The small average size of the British Columbia family is associated with the large proportion of the population born outside the province.

Generally, the incidence of population density on family size is obscured by the operation of the above factors. In Chapter X it was observed that population density was instrumental in causing variation in family size in fifty-six Quebec counties in all of which the population was of the same race, religion, and culture.

PART I

INTRODUCTION

Purpose of Analysis.—This monograph is devoted to a review and analysis of census statistics relating to families and households. Census monographs are designed to make readily available the most pertinent information disclosed by specialized analysis of the masses of data found in the purely tabular census volumes, and to make suggestions for the treatment of unsatisfactory conditions revealed. They also recount the progress of investigational work carried on at the Bureau of Statistics to determine the potentialities of the census for the collection of data for research in the social sciences. The earlier censuses merely compiled totals which served to indicate the growth of population and were necessary for certain administrative purposes, such as the determination of electoral districts. Of recent years such technical progress has been made in the field of census compilation that a vast amount of analytical data can be obtained at a small additional cost. It is highly important that these developments should be utilized to the fullest extent.

The compilation, tabulation and interpretation of census returns is a tedious process and it is obvious that attention must be directed to studies of permanent rather than temporary interest. Most of the 1931 Census monographs deal with relatively specific questions, such as fertility, housing, dependency, unemployment, etc. The scope of this particular monograph, however, is very broad, for it touches on every one of the subjects mentioned above, although it is not the main purpose to correlate the findings of other monographs since this would be an extremely difficult task. The narrower the field, the easier it is to apply statistical measurements, but it would seem that the development of the humanities as exact sciences must depend on the statistician's ability to perfect a technique by which the interplay of diverse social and economic movements and their ultimate effect on human welfare can be measured. It is doubtful if much can be accomplished by planned economy before causal relationships can be definitely established on an empirical basis in economics and sociology.

Chapters I-III of the monograph trace the history of the Canadian family to its birth, study briefly the circumstances of this birth and follow its growth up to 1931. Although the material available limited the study to the size of the household, its variations and their causes, nevertheless this review through the censuses does bring out a good deal of information hitherto unknown and permits interesting comparisons between vastly different periods.

Chapters IV-XII are devoted to the interpretation of the extensive family statistics tables in Volume V of the 1931 Census. In addition to those relating to family size for minute subdivisions of the population, much data concerning other aspects of family structure was available. Particular attention, however, is paid to the incidence of various factors on family size so that the central theme of the monograph is the social and economic background of fertility. The principal causes of our declining birth rate are isolated and methods are suggested by which the decline may be retarded. *En passant*, attention is directed to many other interesting characteristics of family life in Canada. While the treatment of these is necessarily brief, it is hoped that enough has been done to cast fresh light on the repercussions of many social problems.

Definitions.—There are many interpretations of what constitutes a family. For various reasons it has been necessary to employ several definitions in this monograph and it is important that the reader should grasp the exact meaning of each. The definition of a "census family," as given in *Instructions to Commissioners and Enumerators* for the 1931 Census (see Appendix 2, page 275) connotes a group of people living in the same housekeeping unit. Such families are referred to throughout this monograph as *households*. It is to this household that the family data of past censuses apply.

There are many varieties of households which are quite different from the small family group living in the typical home. For example, a penitentiary is a household though it may contain hundreds of inmates. In previous censuses quasi-family groups, such as hotels, rooming houses, and institutions and camps, were not separated from ordinary households with the result

that it was always dangerous to attach much significance to the average size of the household in any one locality. In Chapters I and II light is thrown upon the influence such institutions have had, from time to time, upon the changing sizes of the household. In compiling household data for the 1931 Census, it was decided to isolate certain extraneous types in order that the remaining households might be a homogeneous group. Data for hotels, rooming houses, institutions, camps, shanties and similar households were compiled separately and published in special tables. Consequently, it has been possible to confine the analysis of the 1931 data to *ordinary households* as distinct from the classes mentioned above. The advantages of this are most apparent when the number of persons per household are related to the number of rooms occupied. Such data for hotels and institutions are not only very difficult to interpret, but, if not separated out, adversely affect the analysis.

Even the ordinary household does not coincide with the popular concept of a family. For this reason there were two groups of family tables—those dealing with households in relation to tenure, rentals and housing accommodation and those relating to private families from a social viewpoint. The *private family* consists of the head and his dependents but does not include lodgers and servants. In 1931, when many family heads were unemployed, it was not unusual to find two families living together in the same household so that there was often more than one private family to the household. *Normal private families* are those where husband and wife are living together as heads, as distinct from miscellaneous classes with single, widowed, or divorced heads. The reader should bear in mind these distinctions between the four terms, *the household, the ordinary household, the private family,* and *the normal private family.*

Unless otherwise specified, *Canada* as used throughout the monograph is taken to exclude Yukon and the Northwest Territories, and applies to the nine provinces only. The *urban* population is that residing in cities, towns and incorporated villages and the *rural* population is that residing outside such centres.

Scope of Analysis.—It has already been pointed out that the scope of the historical section of the monograph has been determined entirely by the extent of the available data. The study of 1931 conditions is similarly circumscribed since the principal source of basic material is the tables in Volume V of the Census which were planned and compiled before the interpretative work was commenced. In some cases the data prerequisite for the treatment of certain aspects of family structure cannot be obtained while in others it is possible to overcome the lack of data by the adoption of indirect methods of approach.

Chapter I gives a word picture of family life in New France prior to the English conquest. Chapter II deals with variation in the average size of the Canadian household from 1666 to 1931. Most interesting is the steady decline in the average since 1861, and factors which accentuated this decline during certain decades and minimized it during others are discussed in Chapter III. The chapter on household size in Montreal, Toronto and Winnipeg is designed to form a link with the monograph on housing and rentals and also with the historical chapters of this monograph. It completes the discussion of the significance of averages which is essential as an introduction to a study of average family size. The chapter on lodgers deals with an interesting section of the Canadian population. In Chapter VI the incidence of the ages of family heads on family size is discussed. The age-of-head factor is very important in dealing with family attributes, but unfortunately the interpretation of the family data throughout the monograph has been rendered difficult by the lack of sufficient age data. Chapter VII deals with guardianship children and other dependents and their relationship to family size. The census family includes only the children living at home at the time of the census. In Chapter VIII an attempt is made to relate the size of the census family to the size of the completed family. Chapter IX reviews the very important data on the earnings and occupations of family heads. Chapter X is confined to a discussion of the average size of the farm household by counties and census divisions, while regional differences in family size are discussed in Chapter XI.

CHAPTER I

EARLY HISTORY OF THE CANADIAN FAMILY

To understand to-day's Canadian family—which, more than national wealth, constitution, individuals themselves, is the fundamental life cell of the country—it is necessary to know something of its birth, infancy and adolescence. In these three stages, different factors—some favourable, others prejudicial—have left their marks on the family. They cannot be ignored.

Birth of the Family in Canada.—The first attempt at colonization in Canada that resulted in a permanent settlement was the founding of Quebec in 1608; 28 settlers wintered and the Canadian people came into existence. Out of these 28 persons, only 8 were alive* in June, 1609. One of the survivors, Nicolas Marsolet, was to become the head of a family some twenty-seven years later. There was no woman in Canada before 1616†, when Marguerite Vienne arrived with her husband, Michel Colin. Both died during the year of their arrival.

In 1617, after a crossing that took thirteen weeks, Louis Hébert arrived in Quebec with his wife, Marie Rollet and their three children, Guillaume, Anne and Guillemette. This was really the first Canadian family. Hébert started to clear his land upon his arrival and to cultivate it, and, as Champlain said of him, "He was the first head of a family in Canada who made his living from the soil he cultivated."

Before Louis Hébert's time, Quebec had been but a post for the fur trade. In 1627, when he died, this courageous pioneer owned more than 10 acres of cultivated land. All this land had been dug up with a spade, for Champlain asserts that Hébert's widow used a plough on the twenty-sixth of April, 1628‡, the first time such an implement was used in Canada.

His daughter, Anne, married Etienne Jonquest in 1618. It was the first marriage to take place on Canadian soil. Anne gave birth to a child the following year; unfortunately the first Canadian mother and her child were not to survive. Hébert gave his other daughter, Guillemette, in marriage to Guillaume Couillard**. They settled on a farm which in 1629 represented 20 acres of cultivated land. They had 10 children. Guillaume, the only son of Hébert, married Hélène Desportes. They had 3 children. The line†† of the descendants of Louis Hébert was never broken, and to his title of pioneer may well be added that of patriarch.

The second Canadian-born child also died at birth, in 1621. The father of this child was Abraham Martin, who received from the Hundred Associates a piece of land which later on became the famous Plains of Abraham.

The third birth, in 1624, was that of Marguerite Martin who, at the age of 14, married Etienne Racine.

The valuable work of Cyprien Tanguay, *A travers les Registres*, based on the parochial registers‡‡, the writings of Champlain, Sagard, Leclercq and the Jesuit Relations, gives, year by year from 1608 to 1631, the arrivals, departures, marriages, births, deaths, number of persons wintering in Quebec or "at the Hurons" and the maximum population in Quebec for any of these years. From 1631 to 1800, his tables show the marriages, births and deaths. The first table, reproduced below, tells us, better than any history, the gripping story of the beginnings of the colony. These figures make us realize better than any words could how precarious was the existence of New France from her birth in 1608 to her first fall into the hands of England in 1629.

*10 had died of scurvey; 5 of dysentry.

†However, there had been women in Acadia (the term Canada, as understood at the time, did not include Acadia) before that date. Madame de Poutrincourt was in Port Royal in 1611, and Madame Hébert seems to have accompanied her husband in 1606. Father Biard in a letter, dated January 13, 1612, says: "We are 20, without counting the women." Benjamin Sulte: *Histoire des Canadiens français*, Vol. I, p. 113.

‡Benjamin Sulte: *Histoire des Canadiens français*, Vol. II, p. 18.

**Their marriage is the first entry on the registers of Notre Dame of Quebec.

††Through the women.

‡‡The first one dates from 1621.

I.—MAXIMUM POPULATION IN QUEBEC AND RELATED DATA, 1608-1631

Year	Arrivals	Departures	Marriages	Births	Deaths	Wintering in Quebec	Wintering at The Hurons	Maximum Population in Quebec
1608	31	3	-	-	3	25	-	31
1609	-	-	-	-	17	8	-	25
1610	11	1	-	-	-	17	1	19
1611	1	1	-	-	1	16	1	17
1612	-	-	-	-	-	16	-	16
1613	31	1	-	-	-	47	-	47
1614	-	-	-	-	-	47	-	47
1615	5	19	-	-	-	32	19	52
1616	33	3	-	-	2	60	-	64
1617	7	1	-	-	2	64	-	67
1618	6	3	1	-	1	66	-	70
1619	13	-	-	1	3	77	-	80
1620	6	22	-	-	1	60	-	83
1621	24	5	1	1	1	79	-	85
1622	6	19	-	-	-	50	16	85
1623	2	1	-	-	1	50	16	52
1624	6	4	-	1	1	52	10	57
1625	6	1	-	1	2	56	-	59
1626	27	2	-	1	1	71	10	84
1627	2	15	-	1	4	55	-	71
1628	-	-	-	-	-	55	21	55
1629	600[1]	Eng. 510 Fr. 50	1	1	1	Fr. 26[2] Eng. 90	-	Fr. 76 Eng. 600
1630	-	2	-	-	14[3]	Fr. 24 Eng. 76	-	Fr. 26 Eng. 90
1631	-	-	-	1	-	Fr. 25 Eng. 76	-	Fr. 25 Eng. 76

[1] 600 men composed the crew of David Kirke's five ships.
[2] There were three single men; the rest were members of the six following families: Couillard, Martin, Pivert, Desportes, Ducharme and Hubou.
[3] 14 English.

In 1629, when Champlain surrendered to Kirk, 26 colonists decided to stay in Quebec It was 2 less than in 1608.

Ten years later, in 1639, the population was 274, composed of 64 married men, 64 married women (3 of them born in Canada), 1 widower, 4 widows, 35 single men and 58 young boys (30 of them born in Canada), and 48 young girls (24 of them born in Canada)*. The accumulated vital statistics showed 23 marriages, 52 births and 90 deaths. The year 1639 witnessed 15 births and 9 deaths, but it was only in 1643 that the total number of deaths since the beginning of the colony was counterbalanced by the total number of births. From 1638 to 1800, births exceeded deaths every year, with the exception of the years 1703 and 1733 in which smallpox played havoc in New France†.

The reason for the slow progress of the population is evident: there was practically no immigration. This reason holds good until the second half of the seventeenth century, when Louis XIV took New France away from the Company of the Hundred Associates. The king, taking colonization in his own hands, decided to send soldiers over to eliminate once and for all the danger of destruction of the colony by the Indians. He then encouraged soldiers and officers to settle in Canada and he provided wives for them by sending over young girls, who were called *les filles du roi*‡. The result of this policy was that more than 600 soldiers made Canada their permanent home, the majority of them getting married and taking to farming. This is eloquently illustrated by the marriage statistics of the period.††

Marriages from 1665 to 1673 numbered 759 (or an average of 84 per year). This is as much as the total for the nine years preceding (1656-1664—318 marriages) and the nine years following (1673-1682—449 marriages) this period. The marriage rate per 1,000 population in 1667 was 19·1, and the birth rate per 1,000 population for the same year was 58·0.‡‡

The systematic immigration of girls from 1665 to 1673 lessened the disproportion existing prior to that period between the number of males and females. In 1666, the number of males to every 1,000 females was 1,722. In 1681, the ratio was down to 1,249.**

*Benjamin Sulte: *Histoire des Canadiens français*, Vol. II, p. 92.
†Abbé Cyprien Tanguay: *A travers les Registres*, pp. 26-229.
‡See Chapter I, p. 22.
††From the number of marriages given for each year in C. Tanguay: *A travers les Registres*.
‡‡In 1931, the marriage rate was 6·4 and the birth rate 23·3. The high rates obtained for 1667 are easily explained by the fact that out of a population of 3,918, 1,507 or 38·5 p.c were between the ages of 21 and 40, while in 1931 this group represented only 29·5 p.c. In 1667, there were only 252 persons, or 6·4 p.c., over 51 years of age. In 1931, the percentage for that group was 15·4.
**In 1931, the number of males to every 1,000 females was 1,074.

The white population of Canada was*: 28 in 1608; 60 in 1616; 81 in 1626; 274 in 1639; 675 in 1650; and 2,500 in 1663.

In 1666, the first census of Canada† (the first modern census in any country) showed the population to be 3,215 and the number of families 552. That of 1667 registered 3,918 souls and 668 families.

Unfortunately the impetus that the little colony, especially its families, derived from the attention its pitiful state had attracted in France did not last very long. In 1672, Louis XIV let his attention be diverted from New France by the war with Holland, and the colonists were once more left to themselves. However, these few years of colonization, planned with a keen appreciation of the needs of the little colony, were sufficient to establish the Canadian family on solid foundations.

After 1672, there was practically no immigration and the population growth depended entirely on the natural increase. The Indians were pacified and, under the intelligent direction of Talon, the colony knew an era of agricultural, industrial and commercial development, even of prosperity. There were: 668 families in 1667; 2,797 families in 1707; 4,993 families in 1727; 6,912 families in 1737; and 10,660 families in 1765. With this last date, the infancy stage of the Canadian family was well over.

Birth of the Family in Acadia.—But Canada was only one part of New France. The family was also struggling for existence in Acadia and a struggle it was indeed.

Port Royal‡, the first settlement of Europeans on what is now Canadian soil§, had hardly been founded when it was abandoned in 1607. Poutrincourt brought some colonists in 1610, but, in 1613, Samuel Argall destroyed the little settlement and, although some of the colonists remained in different parts of Acadia, there was no real colonization before 1632. In that year Acadia, which had been taken by Sir David Kirke in 1628, was restored to France by the Treaty of St. Germain-en-Laye. A few families came over with Razilly and settled in La Hève but later on, in search of more fertile lands, they moved to Port Royal. Around 1640, there were about 40 families making their living from the soil in the valley of Port Royal. In 1650, they numbered 45 or 50.**

The first census of Acadia, taken in 1671, showed 392 persons and 72 families. All but 7 of these families were in Port Royal. Of the 72 families, 47 were the original head families.†† The others were but the doubling up of these primitive families.

The Census of 1686 indicates only 36 new names, and the last nominal census, 1714, only 77.‡‡ These 113 new names represent an immigration nearly all made up of single men, who married the daughters and granddaughters of the original families.

The Acadians, forgotten by their mother country§§ and having no relation with Canada, were left entirely to themselves. They made good progress, however, and the multiplication of families was very rapid. In 1731, the population of Acadia was fifteen times that of 1671, while at the end of the period (1666-1726), the population of Canada was only nine times that obtained at the first census.

Thus this twin sister of the Canadian family grew up rapidly till it numbered nearly 18,000 souls in that fatal year that saw about one-third of the population deported to the United States of America, France, England, Canada and the West Indies. From 1755 to 1763, 14,000 Acadians were deported. Families were dismembered and their members spent the rest of their lives looking

*See Census of Canada, 1931, Vol. I, p. 100.

†Extract from original (Can. Arch. S.G. 1, Vol. 460-1): Robert Giffard, escuyer, 79, seigneur de Beauport; Marie Renouard, 67, sa femme; Joseph Giffard, escuyer, 21, seigneur de Fargy; Michelle-Thereso Nau, 23, sa femme; Paul Huo, 25, domestique engagé; Jean Langlois, 24, menuisier; Pierre du Mesnil, 30, domestique; Jean Chainbre, 23, meunier, domestique.

‡Annapolis, N.S.

§One can hardly regard the expeditions of Roberval in 1542, of La Roche in 1598 and of Chauvin in 1600, as settlements.

**J. B. A. Ferland: *Cours d'Histoire du Canada*, p. 496.

Benjamin Sulte: *Histoire des Canadiens français*, Vol. IV, p. 142.

††Names of the 47 head families, from which spring most of the Acadians of to-day (original spelling of the census enumerator retained): Bourgeois, Gaudet, Kriessy (Kessy), de Forest, Babin, Daigre (Daiglo), Hébert, Blanchard, Aucoin, Dupeux (Dupuis), Terriau, Scavois (Savoye, Savoie), Corporon (Corperon), Martin, Pelerin, Morin, Brun, Gautrot, Trahan, Sire (Cyr), Thibeaudeau, Potit pas, Bourg, Boudrot, Guillebaut, Grange, Landry, Doucet, Girouard, Vincent, Brot, Leblanc, Poirié, Commeaux (Comeau), Pitro, Bertrand, Belliveau, Cormié, Rimbault, Dugast, Richard, Melanson, Robichaut, La noue, d'Entremont (Mieux (ou Mius) sieur d'Entremont), La Tour, de Bellisle.—Can. Arch. S. G. 1, Vol. 466-1. Edouard Richard: *Acadia*, Vol. I, p. 32.

‡‡Can. Arch. S. G. 1, Vol. 466-1.

§§Not more than 500 persons came from France in the whole of the seventeenth century.—E. Rameau: *La Race française au Canada*, p. 52.

for each other. A large number perished from grief, want and epidemics in these incessant journeys which took them from Acadia to Virginia, from Virginia to England, from England to France, from France to Guiana, from Guiana back to France and from France to Louisiana.

According to a report written by the secretary to the Ambassador of France in London, M. de la Rochette, who had been committed to make a study of the situation, the Acadians were distributed as follows in 1762:—*

In England (Liverpool, Southampton, Penryn, Bristol)	866
In France (Boulogne, Saint Malo, Rochefort, etc.)	2,000
In New England, Maryland, Pennsylvania, Carolina, etc	10,000
	12,866

A few hundred families remained in Acadia† to be joined later by others who, feeling like strangers everywhere they were taken, found rest only when they could come back to their native land.

In 1763, the majority of Acadians living in England were transferred to France but, from 1784 to 1787, taking advantage of generous offers of settlement, they emigrated to Louisiana. In 1787 the Acadian population was thus distributed:—‡

France	700
United States of America	800
Maritime Provinces, Gaspé, Magdalen Islands, Newfoundland, St. Pierre and Miquelon	4,000
Louisiana	2,500
Province of Quebec	3,500
Others	500
	12,000

Normally, the Acadians should have numbered over 25,000. Apart from an inevitable decrease in the number of births due to the dismemberment of families and the miserable conditions of those that were kept together, the mortality caused by grief and misery was evidently very high.

The Acadians who passed into Canada founded the parishes of Saint Grégoire§, l'Acadie** and St. Jacques de l'Achigan.††

Colonization.—It seems incredible that France after taking possession of a new country did so little to populate it. The population of Canada in 1675 was 7,382; from 1608 to 1675 the natural increase was 3,555, leaving a net immigration of 3,827; 3,827 in 67 years, an average of 57 persons a year, and France was then the most populous as well as the most powerful country in Europe.‡‡

The fact that she was engrossed in constant wars in Europe is not sufficient explanation of the neglect France evinced toward her colony. The real reason is that, not grasping the significance of true colonization, she failed to realize the possibilities of Canada. Dazzled by the precious metals pouring into Spain from America, she was bitterly disappointed when Cartier reported he had not seen any sign of mines. Richelieu, Louis XIV and Colbert did much for the colonization of New France, but even they were far from realizing the importance of the colony. To Talon, asking him for more immigrants, Colbert replied that it would not do to depopulate France to populate Canada.

The wonder is that, colonization being so little understood and given so little help, there was any immigration at all. There were so many factors to discourage the potential settlers. The crossing was not a pleasant voyage by any means. It lasted as long as three or four months on overcrowded ships of 40 to 100 tons. There was always the danger of contracting some

*H. R. Casgrain: *Un pèlerinage au pays d'Evangeline*, p. 193.
†405 families were in Acadia in 1764, according to a memorandum communicated to the Lords of Trade by Wilmot.—Edouard Richard: *Acadia*, Vol. II, p. 310.
‡Idem. Vol. II, p. 341.
§Opposite Trois-Rivières, Que.
**Near St. John, Que.
††County of Montcalm, Que.
‡‡Even if we raise the immigration to 5,000, making liberal allowances for the loss due to bush-rangers, the average would still be only 74.

epidemic disease with which the ships were generally infected, or of being wrecked as happened more than once.* In 1659 and 1662, about one-third of the immigrants were lost during the voyage and the majority of those that reached Quebec were sick.† In 1663, about 60 of 300 emigrants from La Rochelle died during the crossing. The new life awaiting the settlers upon their arrival in New France had an element of adventure and danger which, if it cast a spell on the youth and was no doubt a factor in their coming over, on the other hand, acted as a deterrent to married men with dependents.

What then prompted the 4,000 or 5,000 colonists who made the crossing between 1608 and 1672 to choose New France as their permanent home and to run the risks that went with that choice? Some families, seeking a refuge from the wars of religion, came as to a land of liberty. A good number came to Christianize the natives, and Montreal owes its origin to this desire to spread the Gospel among the Indians. "So far as I know," wrote Chas. W. Colby, "Montreal is the only large city in the world which has arisen out of a mission colony. The design was to found on the island of Montreal, a fortified town which should be both a bulwark against the Iroquois and a centre whence the light of the Gospel might shine forth among the Indian tribes."‡ Others, hearing of the comfortable life awaiting any one willing to work, came with the desire to assure the existence and the future of their children. Land was not scarce and it was theirs for the asking. A number of young men were attracted by the adventure that a new land always offers. Others again, soldiers, officials, merchants, coming with the intention of staying only a few years, found numerous advantages in the conditions of their new life and stayed permanently.

Canada was given poor publicity in France. Voltaire was not by any means the only brilliant Frenchman who clamoured against the bad investment that was New France. General opinion was unfavourable to the young colony. Two publications, however, did much to alter this and to decide young families to come to Canada. The *Relations des Jésuites*, published every year, gave a true picture of the hardships awaiting the settlers, but also pointed out that any one willing to work could live much better here than in France. The other one was the book of the Governor of Trois-Rivières, Pierre Boucher: *Histoire véritable et naturelle des moeurs et productions de la Nouvelle France*, written in 1663 to answer questions asked him by a large number of persons when he went to France in 1661.

Two agencies that played an important role in the establishment of families in Canada were the companies and the seigneurs. Because the task of colonization was too big for individuals and because the monarchy did not care to assume it, commercial companies were founded successively which, in return for certain privileges (the most important being the fur trade monopoly), assumed the responsibility of establishing settlers in New France. Unfortunately the companies, caring only for their profits, failed to discharge their obligations. The most important company, that of the One Hundred Associates, existed from 1627 to 1663. Its charter stipulated that it was to bring over 300 colonists a year. Yet, from 1627 to 1663, the total increase in population did not even reach 2,500, of which the natural increase provided about 800.

Recourse to the Seigneurial System proved a much better plan, and the early settlement of Canada was achieved mainly through it.

The companies granted the seigneur a very large piece of land which he could keep without paying any retribution provided that he brought it under cultivation. The only way he could possibly fulfil that condition was by letting out some portion of his seigneury land to other families. These pieces of land were not to be sold by the seigneur, but rented. The rent was perpetual but very low, being only one *sou* for each acre or, in certain cases, its equivalent in produce. It was not unusual for the seigneur to grant new tenants a few years occupancy rent free. The other principal source of income of the seigneury was the share (one-twelfth of sale price) that the seigneur received at each transfer of property other than by direct descent in the family. This was called the right of *lods et ventes*. Besides the rent and the *lods et ventes* there were other feudal obligations, such as the *cens*,§ the *banalités*** and the *corvée*†† but they amounted to very little, when they were not totally ignored. The seigneurial system was,

*See *Bulletin of Historical Research*, Vol. VII, p. 207.
†E. Salone: *Colonisation de la Nouvelle-France*, p. 144.
‡Chas. W. Colby: *Canadian Types of the Old Régime*, p. 106.
§*Cens*—a fixed charge of a few *sous* for each allotment.
***banalités*—very small dues paid by the *habitant* for the use of the mills or other necessities on the seigneury.
††*corvée*—a certain number of days (3 to 6) which the *habitant* was required to work for the seigneur during the year—or their equivalent, fixed at 40 *sous* a day.

indeed, very different from feudalism of Continental Europe and, between what we might call the standard of living of the French peasant and that of the Canadian *habitant*, there was a wide gulf.

The seigneurial system was introduced into New France to promote the economic development of the colony and the prerogatives of the seigneur, as has been seen, were determined with that end in mind. Not only his revenues, but even the retaining of his grant depended on the peopling of his seigneury, for all land uncleared after a certain period was to be forfeited. One of the first seigneurs and the model of them all for the number of families he transplanted from France into his seigneury, was Robert Giffard, Seigneur of Beauport.

Up to 1639, the Company of the One Hundred Associates conceded about 10 seigneuries. At the end of 1645, there were 25 seigneuries; at the end of 1664, 65. In 1707, the colony numbered 78 seigneuries, of which* 42 were in the government of Quebec, 14 in the government of Trois-Rivières, and 27 in the government of Montreal. The seigneurial régime lasted till 1854. At that time, there were 220 seigneuries possessed by 160 seigneurs.†

Colonists.—There were three categories of immigration from the mother country, *viz.*, families, single men and single women.

The number of complete families that came over is rather small, but, as they were composed of the best class of colonists, farmers, and, as they were generally large families (2 families, Legardeur and Leneuf, brought over by Giffard in 1636 comprised 45 persons‡), they formed the principal group of settlers around which the others gathered and by which they were gradually absorbed. The majority of complete families were recruited by the seigneur and transported at his cost. They came from the same rural districts and very often on landing were greeted by relatives or former neighbours. As E. Rameau said in a lecture given before the *Société d'économie nationale de Paris*, on the 26th of January, 1873§, these families "like a tree transplanted with the soil around its roots, were in the best of conditions to thrive upon a new soil."

The single men belonged mostly to two groups: the *engagés* and the soldiers. The *engagés* were single men who upon their arrival offered their services to the companies or to the colonists already established. Their employers paid them wages and they generally served for a term of three years, whence the name of "36 months" under which they were also known. They lived in the family up to the expiration of their engagement, when they became farmers on their own. The number of *engagés* was very large. Some families, as attested by the Censuses of 1666 and 1667, had as many as 6 or 8 at a time. In 1666, there were 423 *engagés*,** and the total male population 15 years old and over was only 2,022. In 1667, in Quebec alone, out of a population (male and female) of 444, there were 75 *engagés*.†† Pierre Boucher could write‡‡ in 1663: "Most of the settlers here came over as *engagés* and after having worked three years for their masters, they went on their own; after a year's work they have cleared up their lands and they harvest more than they need for themselves. When they go on their own, as a rule they have little to start on; they marry a girl who has no more than they have; however, in less than four or five years you see them well off, provided they be ever so little industrious."

The soldiers belonged to the regiment of Carignan-Salières. Twenty-four companies of this regiment of infantry, veterans of the Turkish wars, arrived in the summer of 1665 to put an end to the ravages caused by the Iroquois. They numbered around 1,200 soldiers, of whom over 800 settled in the colony when they received their discharge. The majority took lands on the seigneuries that were granted to the officers who stayed in the colony. Many villages of the province of Quebec still bear the names of these officers. Chambly was granted to Jacques de Chambly, Varennes to René Gautier, Sieur de Varennes,§§ Verchères to François Jarret de Verchères, Contrecoeur to Antoine Pecody, Sieur de Contrecoeur, Sorel to Pierre de Saurel, Saint Ours to Pierre Roch de Saint Ours, etc., etc.

From 1663 to 1673, about 1,000 young women passed from France into Canada. A number of these young women—known as *les filles du roi*—were sent by the king from the hospitals of Paris and Lyons. These hospitals were houses for the poor rather than for the sick, and young orphans, mostly daughters of officers who died poor, were brought up there at the king's expense.

*Can. Arch. S. G. 1, Vol. 461.
†G. Johnson: *First Thin s in Canada.*
‡Mothers, sisters and brothers included.
§Can. Arch., Pamphlet No. 3869.
**Can. Arch. S.G. 1, Vol. 460-1.
††Can. Arch. S.G. 1, Vol. 460-2.
‡‡Pierre Boucher: *Histoire naturelle et véritable des mœurs et productions de la Nouvelle-France.*
§§Father of Pierre Gautier de Varennes, Sieur de La Verendrye, who discovered the Canadian North-West.

But, as *les filles du roi*, brought up to enter the service of ladies of quality, did not prove strong enough for the work that was theirs as settlers' wives, Colbert, in 1670 asked for peasant girls. He addressed to Mgr. de Harlay, Archbishop of Rouen, the following letter: ". . . . . As in parishes around Rouen, might be found 50 or 60 healthy and strong girls who would be glad to come to Canada to be married, I beg you to employ your credit and authority with the curates of 30 or 40 of these parishes to try to find in each of them one or two girls willing to go to Canada."* So, in 1670, 165 girls arrived at Quebec, not from Paris but from Normandie. Whether they came from Paris or from Normandie, the girls were chosen with the greatest of care. Before they were taken on board, their parents or their friends had to give assurance that they had always been well-behaved.† During the crossing they were committed to the care of some trustworthy woman, usually a nun. At their arrival, they were distributed among commendable families until the time of their marriage. In a letter, dated November 10th, 1670, Talon says of the young girls arrived in the summer months: "I have distributed them among commendable families, until the soldiers who asked for their hands be ready to take house."‡

The early Canadian family was made of these various elements: complete families from France, union of the sons and daughters of the settlers, marriage into the settlers' families of young men who had come either as *engagés* or as soldiers and of young girls brought over for the special purpose of providing the colony with well-chosen wives, and marriage of soldiers to these young women just arrived from the mother country.

Life Along the Shores of the St. Lawrence.—Up to 1642, Canadian families were located only on the north shore of the St. Lawrence River and only in two places, Quebec and Trois-Rivières. The first location, however, was not limited to the town of Quebec, but extended east and west to the adjacent country with two principal settlements, Beaupré and Beauport. The other group in Trois-Rivières was much smaller and was composed only of interpreters and bushrangers. The first of them to settle in Trois-Rivières was Jacques Hertel in 1633, to be followed by Jean Godefroy, Thomas Godefroy, Le Neuf du Herisson, Jean Nicolet, Sebastien Dodier, Jean Sauvaget, François Marguerie, Guillaume Isabel, Guillaume Pepin, Bertrand Fafard, Pierre Blondel, Jean Poisson and Christophe Crevier. There were very few women in this little settlement: between 1634 and 1640 there were six married women, one widow and two little girls.§ Trois-Rivières was the principal meeting place of Indians and traders. The Indians would come at the beginning of the summer, their canoes piled high with furs of all sorts but mostly of beaver. In return for their furs they would receive from the white traders, blankets, hats, coats, axes, arrowheads, knives, swords, guns, powder, corn, peas, raisins, tobacco, etc.**

By 1667, the settlements were still located on the north shore only, but there was by then an important group of families in Montreal, and all along the shore between Montreal and Beaupré modest settler houses were being built. The group of Quebec (Quebec, Beaupré, Beauport and l'Ile d'Orléans) was by far the most important of the three centres of population. It numbered 291 families thus distributed:†† Beaupré, 108; Ile d'Orléans, 89; Quebec, 62; Beauport, 32. Montreal (and vicinity) numbered only 124 and Trois-Rivières only 37. The ranking of Quebec was due not so much to the fact that it was the oldest establishment as to its favourable location. All immigrants landed at Quebec and naturally it kept a large part of the incoming settlers. It was very seldom visited by the Iroquois, especially since the foundation of Montreal which barred their route. Quebec moreover was the political, military and ecclesiastical centre of the colony and, consequently, its population was increased with large groups of officials.

One of the chief characteristics of early settlement in Canada is that it was established along an extended line close to the shores of the St. Lawrence, but did not go at all into the interior. The reason for this is a very simple one: the settlers needed a route to take their produce to market and to bring back from Quebec and later Montreal what they could not produce themselves, and the only available route was the river.‡‡ Instead of selling and buying things by the cart- or truck-load, the Canadian of the seventeenth century sold or bought by the boat-load. Thus, "Joseph Giffard, who had quite a business in stone and lime, promises on the 19th of October,

*Francis Parkham: *The Old Régime in Canada*, p. 219. Benjamin Sulte: *Histoire des Canadiens français*, Vol. IV, p. 119.
†Pierre Boucher: *Histoire naturelle et véritable de mœurs et productions de la Nouvelle-France*, Chap. XIII, p. 153.
‡Benjamin Sulte: *Histoire des Canadiens français*, Vol. IV, p. 121.
§Benjamin Sulte: *Histoire des Canadiens français*, Vol. II, p. 83.
**Relations des Jésuites.*—Relation of 1626, p. 5.
††Can. Arch., S.G. 1, Vol. 460-2.
‡‡The road between Quebec and Montreal was opened only in 1734

1686, to deliver to Guillaume Jourdain and Sylvain Duplex for a building and chimney to the Sieur Pachot—5 boat-loads of freestone. On the 6th of May, 1687, he promises to deliver to L. Lavergne and A. Couteron 5 boat-loads on the beach, at Quebec."* The St. Lawrence also provided the settlers' tables with food that did not cost anything and which was always plentiful. Eels, especially, figured largely on the menu of the early Canadian family. The colonists would get them by thousands during the months of September and October and salt them for their winter use.†

So, the settler upon arriving on the land allotted to him by the seigneur would build a cabin on the beach, clear his land and start sowing. Then he would build a larger and more comfortable house. His neighbours would give him a *corvée*‡ to assist his efforts. The first and second years were hard years, but the new settler's family was assured of being helped generously by the seigneur and the neighbours. After about two years, however, the family was practically self-supporting and could live in comfort. Hunting and fishing added variety to the meals and in scant years made up for a poor crop; a few cattle and chickens were kept on the farm,§ and sugar was obtained from the maple tree. Clothing and other necessities that it could not produce, it would get at Quebec (or Montreal later on). However, since prices for anything it had to buy were double those asked in France, the family was encouraged to start the cultivation of hemp and flax and to weave and spin *l'étoffe du pays.***

The men would spend the winter clearing a little more of their concessions, which provided them with firewood for their homes and timber for the market. When the head of the family required some help for his work in the fields he would hire one or two *engagés*. As the years rolled by, his concession would get larger and larger, but so would his family—and the time would come when he had to establish his sons. This he did by applying to the seigneur for a grant of land next to his own.

Thus, in Quebec at the very first, then at Beauport and Beaupré and later on all along the St. Lawrence between Beauport and Montreal, the family expanded on Canadian soil. This expansion, however, did not come without meeting obstacles in the way. The Iroquois who "come like foxes through the woods, attack like lions and, as they fall upon the colonists when least expected, fly away like birds"†† were a constant threat to the existence of the colony. Beaupré, Beauport, l'Ile d'Orléans, Montreal, etc., lost many of their inhabitants during incursions of these ferocious enemies. The settlers when working in the fields had to carry their guns with them and for a long time, in Montreal, they had to take refuge in the fort and when in the fields had to be protected constantly by a special guard. A decree in 1654 ordered any one going out of his house to carry a gun with lead and powder for six shots and the early census enumerators asked every family if it had any firearm (just as the enumerators in 1931 asked every family if it had a radio). The campaign of the Regiment of Carignan put a stop to the Iroquois hostilities and the peace that followed permitted the settlement of the shores along the Richelieu River hitherto deserted. In 1681, there were already about 300 families established all along the Richelieu. The second war with the Iroquois broke out in 1687 and, in 1689, during the night of August the 5th, an army of 1,500 demented Indians fell upon the colony. The village of Lachine‡‡ was burned down, 200 persons were killed and 120 taken prisoners. The village of La Chenaye§§ was also set on fire and 20 persons were killed.

Epidemics visited the early Canadian families many times and cost many lives. Scurvy decimated the early settlements in Acadia and in Canada. Measles in 1687 cost Canada 500 lives*** and smallpox in 1733 took about 1,800 lives.††† If one considers that the population of Canada was around 11,000 in 1687 and 36,000 in 1733, one can imagine what a setback the loss of so many lives was to the colony in the struggle for existence.

There was, however, a factor which caused more harm than Iroquois and epidemics put together: the desertion of the colony by the bushrangers, the *coureurs-de-bois*. From the very

*Alfred Cambray: *Robert Giffard*, p. 117.
†*Relations des Jésuites* —Relation of 1643, p. 9.
‡*Corvée* or bee—Voluntary work done by a group and without charge to help a member of the community in any enterprise that called for a number of hands at one time. This custom is still popular amongst the rural population of Canada, for instance, when quick housing of the harvest is needed.
§The Census of 1667 showed 3,192 heads of cattle.
**This practice, however, was confined to too few families until 1705, when no goods were to be had in Quebec due to the loss of the ship bringing them in.
††*Relations des Jésuites.*—Relation of 1660, p. 4.
‡‡On the Island of Montreal
§§Lachenaie, county of L'Assomption, Que.
***E. Salone: *Colonisation de la Nouvelle-France*, p. 289.
†††J. B. A. Ferland: *Cours d'Histoire du Canada*, Vol. II, p. 446.

beginning, there were always a few men tempted not only by the great profits to be made out of the beaver trade, but also by the element of danger and adventure that went with it. Their numbers increased every year, especially after 1653 when, the war with the Iroquois preventing the Hurons and the Algonquins from coming down to the colonists, the colonists decided to go up to the Hurons and the Algonquins. The men who deserted were naturally the most active and vigorous—the very ones needed to form new families. In 1673, Louis XIV forbade any one to stay in the woods more than 24 hours without a special permission from the Governor. This edict was followed by many others, but all without avail. In 1680, Monsieur l'Intendant Duchesneau estimated the number of bushrangers at 800.* The desertion of the colony by numbers of virile and desirable members kept on to the end of the French régime.

One can better realize the harm that was done by the Iroquois incursions and the bush-rangers' desertions when comparing the growth of population in Acadia and in Canada. In 1671, the population of Acadia was 392, while in Canada the Census of 1668 showed 6,582 souls. Eighty-five years later, the population of Acadia (1755) had increased forty-five times, while that of Canada had increased only ten times.

However, the numerous impediments to settlement, although they retarded the march forward of the valiant little group along the St. Lawrence, were not sufficient to bring it to a halt. The number of families showed a steady increase for each census: 538 in 1666; 668 in 1667; 1,568 in 1681; 2,797 in 1707; 3,206 in 1712; 4,224 in 1722; 6,045 in 1732 and 7,368 in 1739. The fertility of the early Canadian family was the underlying strength with which it overcame all obstacles. The colonists married early. The bride was generally much younger than the bridegroom, the reason being that women until 1670 were much less numerous than men. The girls who came from France were all young girls and they got married upon their arrival, while the young girls born in the colony were asked in marriage the moment they were of marriageable age. A great number of the latter got married at 14, 13 and 12 years of age. For the Census of 1667, out of 124 families living in Montreal and vicinity, 55 show the husband to be 10 years or more older than his wife.† Early marriages were, moreover, encouraged by a bounty of 20 *livres* offered by the king to each man who married before the age of 21 and to each girl before the age of 17.‡

Everyone helped the young married couple get a good start in life. Mgr. de Saint-Valier wrote in 1686: "One notices in the people something of the dispositions once to be admired in the first Christians; simplicity, devotion and charity are remarkable; everybody helps with pleasure those starting in life, giving or lending them something."§ In Acadia, such dispositions were even more prevailing. There, if the maid knew how to weave and the youth how to make a pair of wheels, they had all they needed to get married. The whole village, whenever a couple got married, would help to establish them. Everybody would do his share in building a house, clearing a bit of land and providing some cattle, hogs, and poultry for the newlyweds.**

Twenty-six marriages were performed from 1608 to 1640 and more than 300 between 1641 and 1660; the total from 1608 to 1760 was 25,464.

Marriage contracts of the time are very interesting documents. In 1647, Magdeleine Boucher, sister of the Governor of Trois-Rivières, brought her husband "200 francs in money, 4 sheets, 2 tablecloths, 6 napkins of linen and hemp, a mattress, a blanket, 2 dishes, 6 spoons and 6 tin plates, a pot and a kettle, a table and 2 benches, a kneading trough, a chest with lock and key, a cow and a pair of hogs."†† By another marriage contract, at about the same time, the parents of the bride, being of humble degree, bind themselves to present the bridegroom with a barrel of bacon deliverable on the arrival of the ships from France.

Marriage at an early age, coupled with the fact that the population over 50 years of age was a very small proportion in this young country, naturally resulted in a very high fertility. In 1667, children under 5 years of age represented 21·8 p.c. of the population (10·3 p.c. in 1931). Large families received financial aid from the Crown: on the 12th of April, 1670, the king in council passed a decree ordering "that in future all inhabitants of the said country of Canada who shall have 10 living children, born in lawful wedlock, not being priests, monks or nuns, shall each be paid out of the moneys sent by His Majesty to the said country, a pension of 300 *livres* a year, and those who shall have 12 children a pension of 400 *livres*."‡‡ Illegitimate children were

*Census of Canada, 1870-71, Vol. IV, p. 14.
†Can. Arch. S.G. 1, 460-2.
‡Benjamin Sulte: *Histoire des Canadiens français*, Vol. IV, p. 120.
§Benjamin Sulte: *Histoire des Canadiens français*, Vol. V, p. 123.
**Nova Scotia Historical Society, Vol. II, p. 129.
††Francis Parkman: *The Old Régime in Canada*, p. 381.
‡‡Idem, p. 227.

practically unknown in early Canada. From 1621 to 1661, 674 babies were baptized and of that number only 1 was illegitimate. In the registers of Trois-Rivières with records of 150 families from 1634 to 1665 there is not a single mention of an illegitimate child.* "Infidelity to the marriage bed was never heard of" in Acadia.†

The atmosphere of seventeenth century New France was one of very high morality and of religious fervour. In 1636, Father Paul Le Jeune wrote:‡ "Exaction, imposture, theft, abduction, murder, treachery, enmity, black malice are to be seen here only once in a year, in the papers and gazettes which are brought here from France." If any undesirable colonist had by chance found passage to Canada, he (or she) was immediately sent back when his lack of virtue was discovered. In 1621, to quote only one example, Champlain sent back to France "two families who had not cleared two square rods of land, but spent their time hunting, fishing, sleeping and drinking." §

The *Relation of 1661* informs us that in Montreal, "in every house, morning and night, everybody got together to say their prayers in common and examine their consciences, the head of the family being as a rule the one who said the prayers, the others, wife, children and servants making the responses".

To support their fervour, the colonists always had the assistance of religion and of a devoted clergy, either French or National. In 1615, 4 Recollet Fathers arrived and in 1625, 5 Jesuits. From 1615 to 1665, 94 priests** came from the old to the New France. On the 29th of September, 1665, the first Canadian to become a priest, M. Germain Morin, was ordained. Out of a total of 752 priests in the colony from 1665 to 1760, 180 were of Canadian birth. The first Canadian girl to become a nun was Françoise Giffard, daughter of Robert Giffard, who made her profession at l'Hôtel Dieu, Quebec, on the 10th of August, 1650. In 1669, out of 22 Ursuline Nuns in Quebec, there were already 9 of Canadian birth.††

The early families in Canada, as in Acadia, were closely linked together by intermarriages as well as by identity of origin, language, religion, tradition, struggles and problems. Families forming a settlement were more like members of one large family, and visitors from France, England and the United States were invariably struck with amazement at the general atmosphere of trust, help and cordial friendship which was prevailing throughout New France.

Naturally, families so closely linked together had a social life. Summer days were filled with work, but the long winter months offered much leisure time which the colonists spent visiting each other. Their chief amusements, whenever they got together, were folklore songs and dances.

Christmas and New Year's offered special occasions for rejoicing and for exchanging tokens of friendship. "Mr. Giffard sent me two capons, wrote Father Lallemant, Mr. Jean Guyon a capon and a partridge, Madame Couillard two live chickens."‡‡

In the fall, with every farm reaping corn, husking bees were numerous and much wholesome fun was witnessed.

A wedding was an occasion for gay celebration. After the church ceremony everybody—and this meant about 100 persons—would go to the house of the bride's father. After a copious banquet that lasted an hour and a half, the bride and the bridegroom would start the dance, the music being supplied by one or more fiddlers (violins were heard for the first time at the wedding of Jean Guyon, son of Jean Guyon, Sieur du Buisson, who on the 27th of November, 1645, married Elizabeth, the daughter of Guillaume Couillard). The dancing—minuets and quadrilles—intermixed with singing would be interrupted for supper, but resumed soon after. At this time, the attendance would be increased by a great number of relatives and friends who had been unable to come during the day. Very often the festivities would be resumed the following day at the house of the bridegroom's father. §§ Thus the colonists enlivened their rugged life with guileless pleasures.

So, realizing the part it had to play in America, shunning no duty, but facing and surmounting with courage and confidence every obstacle with which the road was strewn, the early Canadian family showed and prepared the way for the Canadian family of to-day.

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*Benjamin Sulte: *Histoire des Canadiens français*, Vol. III, p. 74.
†From a letter of Hon. Brook Watson.—*Nova Scotia Historical Society*, Vol. II, p. 129.
‡*Relations des Jésuites.*—Relation of 1636, p. 42.
§Benjamin Sulte: *Histoire des Canadiens francais*, Vol. II, p. 12.
**60 Jesuits, 13 Recollets and 21 secular priests
††Benjamin Sulte: *Histoire des Canadiens français*, Vol. III, p. 67; Vol. IV, p. 101.
‡‡Alfred Cambray: *Robert Giffard*, p. 316.
§§Idem., p. 322.

CHAPTER II

SIZE OF THE CANADIAN HOUSEHOLD, 1666-1931

Average Size of the Household.—As is the case with a great many early biographies, there is a chronological gap in the life history of the Canadian household. This is a century-long gap, because, since the censuses taken from 1739 to 1851 fail to give the number of households, basic data upon which the study rests are broken and the story of the average size of the household is divided into two periods. The first period, extending from 1666 to 1739, is based on seventeen of the censuses taken at irregular intervals during the Old Régime, the second, on the nine censuses taken at ten-year intervals from 1851 to 1931:—

II.—AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, CANADA, 1666-1931

Census Year	Total Population	House-holds	Persons per Household	Census Year	Total Population	House-holds	Persons per Household
1666	3,215	552	5·82	1736	39,586	6,853	5·78
1667	3,918	692	5·66	1737	40,223	6,999	5·75
1681	9,677	1,591	6·08	1739	43,362	7,468	5·81
1707	17,530	2,854	6·14				
1712	19,711	3,269	6·03	1851	2,312,919	374,491	6·18
1716	20,903	3,370	6·20	1861	3,090,561	491,687	6·29
1719	22,503	3,638	6·19	1871	3,485,761	622,719	5·60
1720	24,594	4,008	6·14	1881	4,268,364	800,410	5·33
1721	25,923	4,265	6·08	1891	4,734,272	900,080	5·26
1722	26,589	4,309	6·17	1901	5,323,967	1,058,564	5·03
1726	29,859	4,855	6·15	1911	7,191,624	1,482,980	4·85
1727	31,184	5,077	6·14	1921	8,775,319	1,897,127	4·63
1730	34,753	5,853	5·94	1931	10,362,833	2,276,595	4·55
1732	35,417	6,135	5·77				

The statistics given for the years from 1666 to 1739 in Statement II refer to New France; for 1851, 1861 and 1871, to Upper Canada, Lower Canada, New Brunswick and Nova Scotia; for 1881 and 1891, to the whole of Canada exclusive of the Northwest Territories; and for 1901 to 1931, to the whole of Canada, exclusive of Yukon and the Northwest Territories.

The years 1666, 1667 show relatively small numbers of persons per household compared with the rest of the French régime. The reason is easily deduced from the records. The numerous marriages taking place at that period account for a large number of families of two or three persons, which, considering that there were less than 700 households in 1666, 1667, could easily decrease the average population per household. In a number of cases, where the groom or the bride, or both of them, were already members of families, marriage would act as a double factor in reducing the average size of the household: by decreasing the large families and increasing the number of small families.

It is true that the birth rate was extremely high—58·0 per thousand population in 1667—but this factor, a consequence of the numerous marriages, was too recent to counteract the influence of the high marriage rate in reducing the size of the average household. This is illustrated in Statement IV, where the years 1666 and 1667 show 2·26 children under 15 years of age per household, while every other census year under the French régime shows a higher average.

It may be noticed in Statement II that the average number of persons per household in New France remains constant for a very long time: from 1681 with 6·08 to 1727 with 6·14, it never varies more than 0·17 between any two censuses. For the year 1730 the average is, for the first time since 1667, below 6 and it remains below this mark for each of the following censuses to the end of the French régime. There are three causes for the decrease:—

(1) The death toll was large in 1730; due to an epidemic of measles and whooping cough, and was extremely large in 1733, due to the terrible epidemic of smallpox which burst on the colony, claiming five out of every hundred Canadians and giving 1733 a death rate of over 55 (compared with 10·1 for 1931). The years 1730 and 1733 stand out in the following record of deaths computed by C. Tanguay*: 1728, 795; 1729, 836; 1730, 1,173; 1731, 960; 1732, 872; 1733, 2,025; 1734, 870.

(2) A great number of marriages took place in 1729, 1730 and 1731.

*A traverse les Registres, pp. 128, 140.

(3) The exodus of Canadians—members of families rather than families—to Louisiana, Illinois, Missouri, Michigan, Wisconsin, Minnesota, etc., must be considered a factor in the decrease of the average size of the household from 1730 to 1739, although such exodus had not yet reached the alarming proportions to which it was to soar a century later.

The second period starts with a very high average: 6·18 persons per household in 1851 and 6·29 in 1861, the latter being the highest average in the history of Canada. In the years immediately preceding 1861, by a combination of circumstances, several factors favourable to the expansion of the average size of the household made their appearance.

Immigration—because it is, as a rule, made up of individuals or young incomplete families—will lower the average size of the household. Immigration, as the records show, was heavy in the decade 1851-61. Yet, the Census of 1861 showed not a lower but a higher average. This apparently contradictory phenomenon is easily understood since there was very little immigration at the end of the decade (immigrant arrivals for the years 1858 to 1861, inclusive, averaging only 9,625 per year), and that by 1861 the numerous arrivals since the middle of the previous decade had had time to change from individuals into families and from incomplete into complete families.

There was little migration from the old counties into new ones or into another province, or from country to city, which would have caused a breaking up of households.

Rural areas, more favourable to large families than urban, contained 85 p.c. of the total population.

The result of such favourable factors was a period of great internal increase with the ultimate result of an average household of 6·29 persons.

For 1871, the average is down to 5·60 and it decreases with every census to reach 4·55 in 1931, 1·74 persons less per household than in 1861.

The largest single drop—0·69 persons per household—occurred between 1861 and 1871. While for the decade 1851-61 there was an increase of population of 33·6 p.c. and a corresponding increase in the number of households of 31·3, for the decade 1861-71 an increase of population is shown of only 12·8 p.c., when the households were increasing by 26·6 p.c. The rate of increase of the native population, notwithstanding considerable emigration to the United States, was nearly as large as that for the previous ten years; but the rate of increase of the total population was greatly reduced due to the fact that the immigrant population actually decreased by over 90,000 during the decade. Immigrant arrivals from 1861 to 1870, inclusive, amounted to 178,814, but foreign-born population departures to the Southern States were even more numerous. The increase in the number of households can be partly attributed to the settling of new districts in Ontario and Quebec.

Another large drop is shown in Statement II for 1881, with the average household down to 5·33 persons. The explanation is practically the same as for the previous decade, together with the fact that the provinces of Manitoba and British Columbia are included in the figures and account for a fraction of the difference; the former province showed an average of 4·65 persons per household, and the latter one of 4·73. As is generally the case for frontier countries, the population of these young provinces was built up from immigration largely composed of single persons and of small families.

The year 1891 shows the smallest decrease in the size of the household for any decade in the period from 1861 to 1931. It may be interesting at this point to compare the size of the average household in Canada with that of other countries.

Year	Country	Persons per Household
1891	Canada	5·26
1890	Ireland	5·0
1890	United States	4·9
1890	Austria	4·8
1890	England	4·7
1890	Germany	4·7
1890	Switzerland	4·6
1890	Scotland	4·6
1891	France	3·6

Reverting again to Statement II, it will be seen that the decrease is large again in Canada for 1901, 1911 and 1921, but is very small for 1931. It is interesting to note that the decrease in the size of the household has been steady since 1891 and exactly the same in the United States and in Canada, amounting to two-tenths of an individual per decade, except in 1931 for Canada.

III.—AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, UNITED STATES, 1890-1930, AND CANADA, 1891-1931

United States		Canada	
Year	Persons per Household	Year	Persons per Household
1890	4·9	1891	5·26
1900	4·7	1901	5·03
1910	4·5	1911	4·85
1920	4·3	1921	4·63
1930	4·1	1931	4·55

Factors of Decrease in Average Size of the Household.—The variations in the size of the decrease from decade to decade can be largely attributed to a difference in intensity or in direction of the movements of population.* However, underneath this factor, irregular and violent, an element of decrease more regular, more gentle, but, at the same time, more important is concealed, *viz.*, a declining birth rate. For, if there is definite proof that the variations in the size of the decrease were caused by changes in the population movement, there is, on the other hand, no doubt that an important percentage of the decrease registered at each decade is to be attributed to a smaller birth rate.† It is true that the size of the private family and not that of the household is directly affected by the birth rate, but the basis of the household is the private family and what gives a nation a large or a small average size of household is, after all, its large or small average size of family. Other factors which have played a part in reducing the average size of the household are:—

(1) The ageing of the population, by which process the top divisions of the age distribution gained steadily. In 1931, there were 3,276,421 children under 15 years of age, an increase of 1,826,176, or 126 p.c., over 1871; in the meantime, however, the rest of the population had increased 5,050,896, or 248 p.c. The following statement illustrates very well the ageing process:—

IV.—PROPORTION PER 100 OF THE POPULATION, BY CERTAIN AGE GROUPS, CANADA, 1871-1931

Age Group	1871	1881	1891	1901	1911	1921	1931
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
40-49	8·0	8·4	8·8	9·8	10·0	10·9	11·9
50-59	5·5	5·8	6·2	6·8	6·9	7·3	8·2
60 and over	5·5	6·3	7·0	7·6	7·1	7·5	8·4

Part of the decrease in the number of children under 15 years of age per household, as shown in Statement V, can be attributed to an increasing proportion of the population in the older age divisions. Of course, the declining birth rate played a part in this changing of proportion within each age group.

V.—NUMBER OF CHILDREN UNDER 15 YEARS OF AGE PER HOUSEHOLD, CANADA, 1666-1931

Census Year	Children under 15		Households	Census Year	Children under 15		Households
	Total	Per Household			Total	Per Household	
1666	1,247	2·26	552	1736	17,450	2·55	6,853
1667	1,563	2·26	692	1737	17,438	2·49	6,999
1681	4,637	2·91	1,591	1739	18,644	2·50	7,468
1707	8,473	2·97	2,854				
1712	9,525	2·91	3,269	1851[1]	823,882	2·77	297,270
1716	9,605	2·85	3,370	1861[2]	1,202,691	2·66	451,437
1719	9,977	2·74	3,638	1871[3]	1,450,245	2·33	622,719
1720	10,301	2·57	4,008	1881[4]	1,651,995	2·06	800,410
1721	10,217	2·40	4,265	1891[4]	1,719,600	1·91	900,080
1722	10,314	2·39	4,309	1901[5]	1,834,375	1·73	1,058,564
1726	12,474	2·57	4,855	1911[5]	2,363,638	1·59	1,482,980
1727	13,366	2·63	5,077	1921[5]	3,016,984	1·59	1,897,127
1730	14,860	2·54	5,853	1931[5]	3,276,421	1·44	2,276,595
1732	15,483	2·52	6,135				

[1] Provinces of Upper and Lower Canada.
[2] Provinces of Upper Canada, Lower Canada and Nova Scotia.
[3] Provinces of Ontario, Quebec, Nova Scotia, New Brunswick.
[4] Canada, exclusive of Northwest Territories.
[5] Canada, exclusive of Yukon and Northwest Territories.

*See Chapter III.
†See monograph on fertility.

(2) The constantly larger proportion of the population within the married state, from which followed an increase in the number of households relatively greater than the increase in population. The following statement permits a comparison between the percentage increase in the number of households and the percentage increase in population.

VI.—PERCENTAGE INCREASE PER DECADE IN POPULATION AND HOUSEHOLDS, CANADA,[1] 1861-1931

Decade	P.C. Increase in		Decade	P.C. Increase in	
	Population	Households		Population	Households
1861-71	12·8	26·6	1911-21	22·0	27·9
1871-81	22·5	28·5	1921-31	18·1	20·0
1881-91	10·9	12·5			
1891-1901	12·5	17·6	1861-1931	235·3	363·0
1901-11	35·1	40·1			

[1] Canada in this statement is given the same boundaries as in Statement II.

The increase in the proportion of the population within the married state is partly responsible for the difference between the two percentages in Statement V.

VII.—PERCENTAGE OF THE POPULATION IN THE MARRIED STATE, BY SEX, CANADA, 1871-1931

Year	Percentage Married		Year	Percentage Married	
	Males	Females		Males	Females
1871	29·86	30·63	1911	34·85	36·97
1881	31·55	32·28	1921	37·49	38·32
1891	32·36	33·37	1931	37·83	38·74
1901	33·76	34·51			

The above statement may lead one to believe that marriage as an institution was looked upon more favourably at each census. The explanation of the steady increase in percentages, however, is the ageing of the population and not greater eagerness on the part of the marriageable males and females to marry. This is clearly demonstrated in the following statement (borrowed from Volume I of the Seventh Census of Canada, 1931, Part II, Chapter IV), in which the influence of age distribution has been duly corrected.

VIII.—PERCENTAGE OF THE POPULATION IN THE MARRIED STATE, CORRECTED FOR THE INFLUENCE OF AGE, BY SEX, CANADA, 1871-1931

Year	Percentage Married		Year	Percentage Married	
	Males	Females		Males	Females
1871	29·86	30·63	1911	27·23	31·20
1881	29·82	30·42	1921	28·86	32·01
1891	28·58	29·90	1931	28·27	31·50
1901	27·16	29·72			

(3) Urbanization, more marked at every census since 1871, when 20·3 p.c. of the four provinces of Ontario, Quebec, Nova Scotia and New Brunswick lived in urban centres, to 1931 when urban centres claimed 53·7 p.c. of the population of Canada. There is no doubt that urbanization is a factor in the decrease of the average size of the household. Cities offer their inhabitants numerous advantages resulting from concentration of population, but they also develop conditions of living that are not conducive to the large family.

Such are the principal factors that have exerted an influence on the size of the household. They are not the only ones by any means. There are a good many others that undoubtedly should be taken into account, such as prosperity and depression, race and religion, social laws, culture, morality, etc.; but, while in the case of the factors reviewed above figures can be brought forward that permit a reasonable measurement of their respective influence, it is next to impossible to measure the influence of the others and to attempt it would be beyond the scope of the present study.

Average Size of Rural and Urban Household in Eastern Canada.—Great importance is generally attached to the influence of rural and urban distributions and of racial origin on the average size of the household. The statements in the following pages help to bring out the part played by these two factors in shaping up the size of the household in Eastern Canada.

IX.—PROPORTION OF THE POPULATION IN RURAL AND URBAN AREAS,[4] EASTERN CANADA, 1667-1931

Census Year	Total Population	Rural Population		Urban Population	
		No.	P.C.	No.	P.C.
1667	3,918	2,501	63·8	1,417	36·2
1681	9,677	6,764	69·9	2,913	30·1
1707	17,530	13,936	79·5	3,594	20·5
1721	25,923	18,179	70·1	7,744	29·9
1736	39,586	30,867	78·0	8,719	22·0
1861[1]	2,507,657	2,250,384	89·7	257,273	10·3
1871[2]	3,485,761	2,779,612	79·7	706,149	20·3
1881[3]	4,156,645	3,064,782	73·7	1,091,863	26·3
1891[3]	4,483,593	3,001,094	66·9	1,482,499	33·1
1901[3]	4,725,798	2,873,090	60·8	1,852,708	39·2
1911[3]	5,471,023	2,889,957	52·8	2,581,066	47·2
1921[3]	6,294,655	2,894,879	46·0	3,399,776	54·0
1931[3]	7,315,041	3,024,464	41·3	4,290,577	58·7

[1] Upper and Lower Canada.
[2] Ontario, Quebec, Nova Scotia, New Brunswick.
[3] Ontario, Quebec, Nova Scotia, New Brunswick, Prince Edward Island.
[4] Rural and urban population in this and the following statements may, in some instances, be found slightly different from that published in Volumes I and II of the 1931 Census, due to the fact that to get at the corresponding number of households it was necessary to use figures and divisions as given in earlier censuses.

The last column of Statement IX shows the rapid and constant march forward of urbanization in Canada since 1861. At that date, urban centres of Upper and Lower Canada contained only 103 out of every 1,000 inhabitants of these two provinces. In 1931, incorporated villages, towns and cities of Quebec, Ontario, Nova Scotia, New Brunswick and Prince Edward Island contained 587 out of every 1,000 inhabitants of these provinces.*

A study of the rural and urban columns demonstrates that urban centres grew at the expense of rural areas. There is no question that the majority of immigrants went to swell the cities, nor is it a secret that farms, in alarming numbers, were deserted for the city. Moreover, when we know that between 1871 and 1931 the number of incorporated places in Eastern Canada passed from 194 to 829, it becomes very easy to understand how urban centres passed from a population of 1,091,863 in 1881, to one of 4,290,577 in 1931, an increase of 293 p.c., when, in the meantime, rural areas were losing 40,318 souls, or 1·3 p.c. of their 1881 population.

X.—AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, RURAL AND URBAN, EASTERN CANADA, 1667-1931

Census Year	Population			Households			Persons per Household		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
1667	3,918	2,501	1,417	692	456	236	5·66	5·48	6·00
1681	9,677	6,764	2,913	1,591	1,142	449	6·08	5·92	6·49
1707	17,530	13,936	3,594	2,854	2,304	550	6·14	6·05	6·53
1721	25,923	18,179	7,744	4,265	2,880	1,385	6·08	6·31	5·59
1736	39,586	30,867	8,719	6,853	5,298	1,555	5·78	5·83	5·61
1861[1]	2,507,657	2,250,384	257,273	396,968	348,946	48,022	6·32	6·45	5·36
1871[2]	3,485,761	2,779,612	706,149	622,719	486,527	136,192	5·60	5·71	5·18
1881[3]	4,156,645	3,064,782	1,091,863	775,802	556,052	219,750	5·36	5·51	4·97
1891[3]	4,483,593	3,001,094	1,482,499	847,585	556,179	291,406	5·29	5·40	5·09
1901[3]	4,725,798	2,873,090	1,852,708	933,395	558,805	374,590	5·06	5·14	4·95
1911[3]	5,471,023	2,889,957	2,581,066	1,100,828	570,620	530,208	4·97	5·06	4·87
1921[3]	6,294,655	2,894,879	3,399,776	1,328,358	590,539	737,819	4·74	4·90	4·61
1931[3]	7,315,041	3,024,464	4,290,577	1,567,657	623,417	944,240	4·67	4·85	4·54

[1] Upper and Lower Canada.
[2] Ontario, Quebec, Nova Scotia, New Brunswick.
[3] Ontario, Quebec, Nova Scotia, New Brunswick, Prince Edward Island.

A striking fact, unusual in demography, stands out from Statement X, *viz.*, that the average urban household is larger than the rural household for the years 1667, 1681 and 1707. The explanation is that urban centres (Quebec especially) at the beginning of the colony contained a considerable population living in quasi-family groups and these large households were sufficient, due to the small total population, to raise the average size of the urban household. Thus in 1667,

*If to the five Eastern Provinces of the statement are added Manitoba, Saskatchewan, Alberta and British Columbia, the proportion living in urban centres is somewhat lowered, as might be expected, though it is still 537 to the thousand.

out of an urban population of 1,417, 177 persons were living in seven institutions and the influence of these seven quasi-family groups was sufficient to raise the average by 0·59. Naturally, as the population of the colony increased, the influence of the quasi-family groups on the average size of household gradually diminished, and to-day the population of such groups, large as it is, is so well lost in the total population that its influence on the average size of household is practically nil.

The extraordinary increase in urban population between 1707 and 1721 is due to the inclusion of the environs of Quebec and of the seven parishes on the Island of Montreal in the urban figure for 1721. The large decrease in the average size of the urban household during that period seems to be due to a diminution of the influence of the quasi-family groups and to a resumption of immigration. In 1707, there was one person living in an institution for every twelve living outside; in 1721, the ratio was one to seventeen.* This change of ratio is responsible for a decrease of 0·25 out of a total decrease in size of household of 0·94 between 1707 and 1721. The movement of immigration, interrupted since 1680, had been resumed in 1710 and, although not considerable, was probably sufficient to account for the rest of the decrease.

In 1736, the seven parishes on the Island of Montreal, with a population of 3,124, are counted with the rural population; this explains the large increase recorded in rural 1736. The decrease in the size of the rural household is common to the three governments (as they were called) of Quebec, Trois-Rivières and Montreal, although it is only 0·2 in the government of Quebec. The decrease is to be attributed to the opening up of new parishes.

The period 1861-1931 is characterized by a smaller household, rural and urban, at every census with the single exception of the urban for 1891. Such an exceptional case as shown in 1891—the size of the urban household increasing when that of the rural is decreasing—is due to the particular character of the movement of the population in Eastern Canada during the decade 1881-91. Firstly, there was a huge immigration some of which found its way to the eastern cities. Secondly, the outward movement may be divided into two classes according to its destination. One—the larger of the two—was westward and to the United States; the other was almost entirely towards urban centres. Four cities, Montreal, Ottawa, Hamilton and Toronto, absorbed nearly three-fifths of the total increase of 326,948 in the East. In the meantime, the rural population, supplying the two movements, declined by 63,688. Apart from their direction (one might add because of it), the two outward movements differed in their composition. The single person, looking for adventure, went to the West or to the United States; the head of a family moved on to the nearest city where he knew what he could expect for his family. The first group decreased the size of the rural household, the second increased the size of the urban household.

The last three columns in Statement X reveal a highly interesting peculiarity: the alternate recurrence of large and small decreases in each column and at every decade from 1871 to 1931, as shown in Statement XI. This curious phenomenon calls for more than mere mention; it will be studied in Chapter III.

XI.—DECREASE[1] IN AVERAGE SIZE OF HOUSEHOLD, BY DECADES, RURAL AND URBAN, EASTERN CANADA, 1871-1931

Decade	Decrease in Household Size			Decade	Decrease in Household Size		
	Total	Rural	Urban		Total	Rural	Urban
1871-81	0·24	0·20	0·21	1911-21	0·23	0·16	0·26
1881-91	0·07	0·11	−0·12	1921-31	0·07	0·05	0·07
1891-1901	0·23	0·26	0·14				
1901-11	0·09	0·08	0·08	1871-1931	0·93	0·86	0·64

[1] Minus sign denotes increase.

It may be noticed from Statements X and XI that, during the period 1871-1931, the rural household experienced a larger drop in size than did the urban household, although its size remained larger than the urban at each census.

If Eastern Canada is compared with the whole of Canada†, it is found that the average size of the household presents in each case an identical decrease at each census except in 1911 when the decrease for Canada was double that for Eastern Canada. This difference is due to the invasion of the West by European settlers at the beginning of the century. Immigration from 1901 to 1911 exceeded 1,750,000, a figure larger than the combined immigration of the three

*These ratios are for urban population.
† See Statement II.

decades from 1871 to 1901. The majority of immigrants settled in the Prairie Provinces, which is corroborated by the difference in increase of population between Canada which grew by 1,867,000 (an increase also larger than that of the three previous decades) or 35·1 p.c. and Eastern Canada which grew by 745,000 or 15·8 p.c.

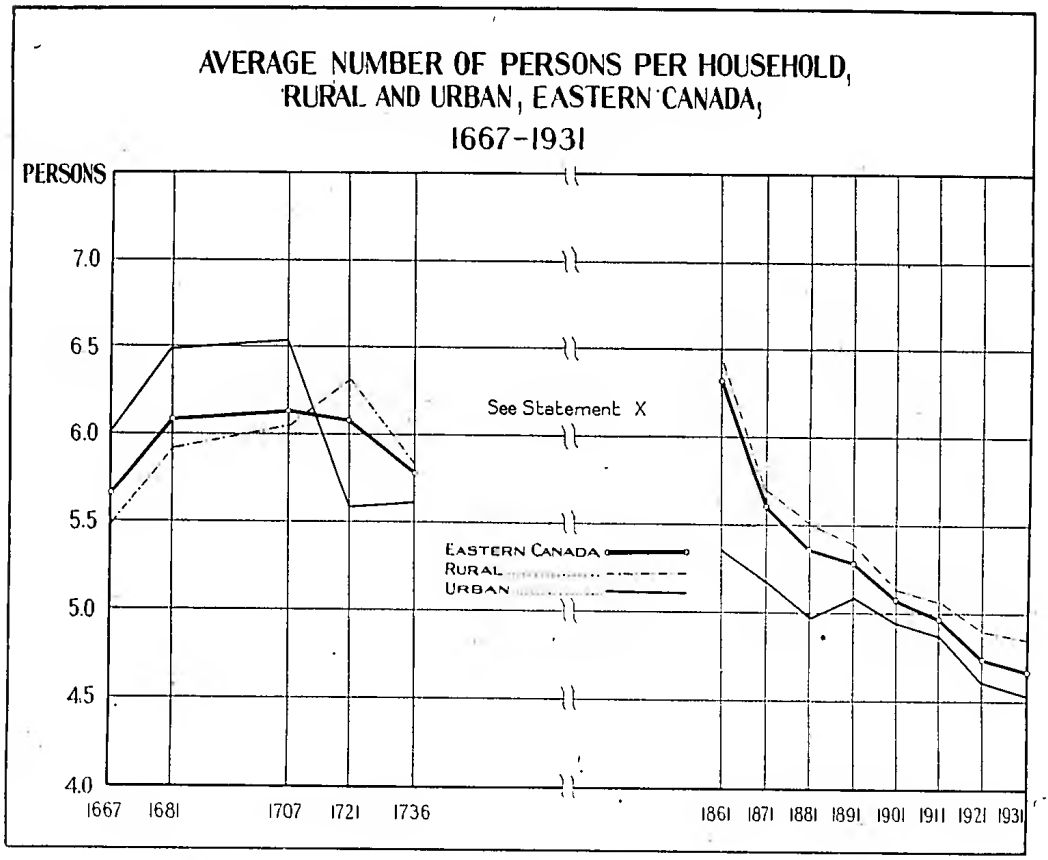

Chart 1

Average Size of Rural and Urban Household in the Provinces of Eastern Canada.—A comparison of the average size of the rural and urban households in the various provinces of Eastern Canada for census years back to 1871 is given in Statement XII.

XII.—AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, EASTERN CANADA AND PROVINCES, 1871-1931

Census Year	Eastern Canada	Ontario	Quebec	Nova Scotia	New Brunswick	Prince Edward Island
1871	5·60	5·55	5·59	5·72	5·78	–
1881	5·36	5·26	5·33	5·54	5·64	6·06
1891	5·29	5·10	5·47	5·38	5·50	5·86
1901	5·06	4·79	5·37	5·14	5·28	5·51
1911	4·97	4·64	5·40	5·00	5·24	5·09
1921	4·74	4·30	5·34	4·82	5·04	4·71
1931	4·67	4·20	5·32	4·67	5·00	4·68

From the statistics there given the following conclusions may be drawn:—

(1) Every province shows a smaller household in 1931 than in 1871. For three of them, Ontario, Nova Scotia and Prince Edward Island, the drop is 1 person per household.

(2) Except for Quebec, 1891 and 1911, each census records a decrease in every province.

(3) Ontario has at each census a lower average size than the average for Canada. As a matter of fact, Ontario holds for each census year the lowest average of all five provinces.

(4) The largest drop of the period occurred in Prince Edward Island which lost 1·38 persons per household from 1881 to 1931.

(5) Prince Edward Island also lost the most in any single decade with a drop of 0·42 between 1901 and 1911.

(6) Quebec shows the smallest decrease with an average household for 1931 of only 0·27 less than for 1871.

XIII.—DECREASE[1] IN AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, BY DECADES, EASTERN CANADA AND PROVINCES, 1871-1931

Decade	Eastern Canada	Ontario	Quebec	Nova Scotia	New Brunswick	Prince Edward Island
1871-81	0·24	0·29	0·26	0·18	0·14	–
1881-91	0·07	0·16	−0·14	0·16	0·14	0·20
1891-1901	0·23	0·31	0·10	0·24	0·22	0·35
1901-11	0·09	0·15	−0·03	0·14	0·04	0·42
1911-21	0·23	0·34	0·06	0·18	0·20	0·38
1921-31	0·07	0·10	0·02	0·15	0·04	0·03
1871-1931	0·93	1·35	0·27	1·05	0·78	1·38

[1] Minus sign denotes increase.

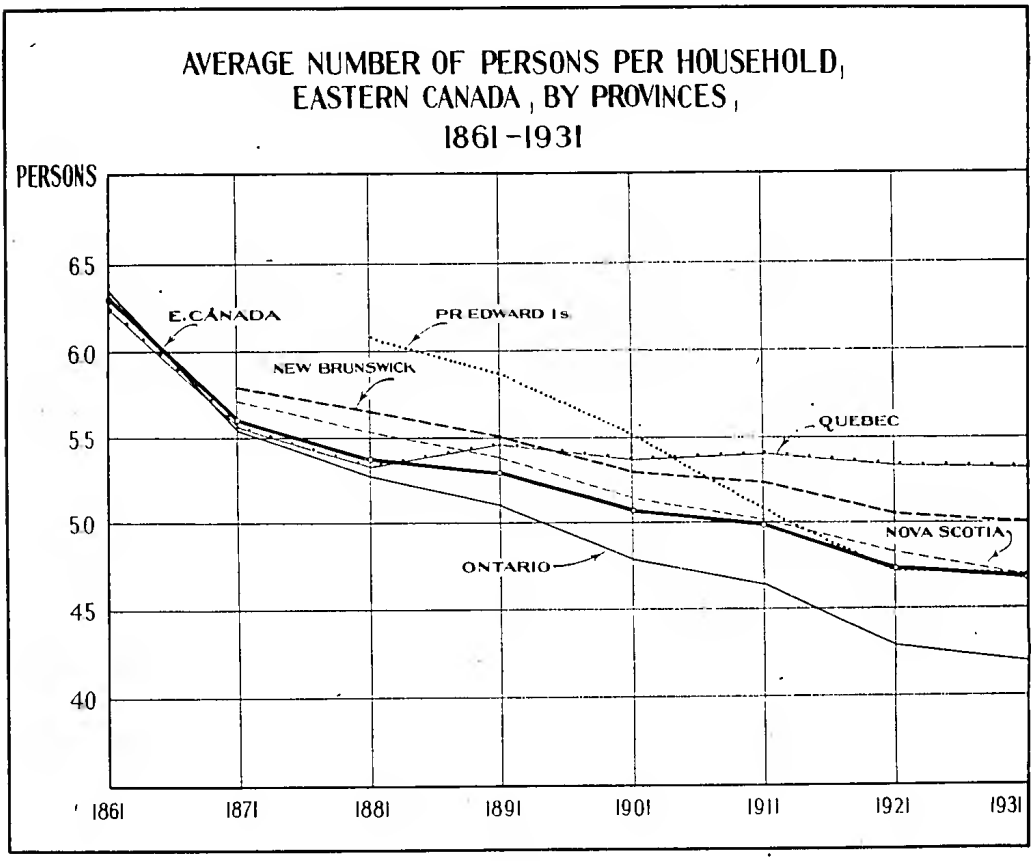

Chart 2

XIV.—AVERAGE NUMBER OF PERSONS PER RURAL HOUSEHOLD, EASTERN CANADA AND PROVINCES, 1871-1931

Census Year	Eastern Canada	Ontario	Quebec	Nova Scotia	New Brunswick	Prince Edward Island
1871	5·71	5·63	5·75	5·79	5·94	–
1881	5·51	5·39	5·53	5·61	5·79	6·15
1891	5·40	5·15	5·64	5·39	5·63	5·95
1901	5·14	4·83	5·49	5·10	5·43	5·57
1911	5·06	4·66	5·59	4·90	5·41	5·14
1921	4·90	4·37	5·74	4·69	5·16	4·73
1931	4·85	4·27	5·86	4·57	5·21	4·66

XV.—DECREASE[1] IN AVERAGE NUMBER OF PERSONS PER RURAL HOUSEHOLD, BY DECADES, EASTERN CANADA AND PROVINCES, 1871-1931

Decade	Eastern Canada	Ontario	Quebec	Nova Scotia	New Brunswick	Prince Edward Island
1871-81	0·20	0·24	0·22	0·18	0·15	–
1881-91	0·11	0·24	−0·11	0·22	0·16	0·20
1891-1901	0·26	0·32	0·15	0·29	0·20	0·38
1901-11	0·08	0·17	−0·10	0·20	0·02	0·43
1911-21	0·16	0·29	−0·15	0·21	0·25	0·41
1921-31	0·05	0·10	−0·12	0·12	−0·05	0·07
1871-1931	0·86	1·36	−0·11	1·22	0·73	1·49

[1] Minus sign denotes increase.

Statements XIV and XV illustrate the following points:—

(1) Quebec is the only province to present for 1931 an average higher than for 1871. Ontario, Nova Scotia and Prince Edward Island record a drop of 1 person.

(2) Quebec presents four censuses with increases in the average size of the rural household, and, still more important, three of these happen to be 1911, 1921 and 1931.

(3) New Brunswick is the only other province to show an increase between any two censuses, at the Census of 1931.

(4) Each census finds Ontario with the lowest average of all five provinces.

(5) The largest drop of the period goes to Prince Edward Island with a loss of 1·49 persons per household; to this province also goes the largest drop in a single decade for the three decades 1891-1901, 1901-11 and 1911-21.

XVI.—AVERAGE NUMBER OF PERSONS PER URBAN HOUSEHOLD, EASTERN CANADA AND PROVINCES, 1871-1931

Census Year	Eastern Canada	Ontario	Quebec	Nova Scotia	New Brunswick	Prince Edward Island
1871	5·18	5·28	5·08	5·07	5·15	–
1881	4·97	4·98	4·88	5·16	5·07	5·50
1891	5·09	5·01	5·17	5·33	5·04	5·33
1901	4·95	4·75	5·19	5·24	4·90	5·19
1911	4·87	4·61	5·20	5·19	4·86	4·80
1921	4·61	4·26	5·06	5·00	4·81	4·65
1931	4·54	4·16	5·04	4·79	4·61	4·74

XVII.—AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, MONTREAL, QUEBEC, TORONTO AND HAMILTON, 1871-1931

Census Year	Montreal	Quebec	Toronto	Hamilton
1871	5·16	4·87	5·26	5·25
1881	4·96	4·49	4·81	5·13
1891	5·13	5·36	5·29	5·09
1901	5·17	5·34	5·11	4·82
1911	5·18	5·36	4·95	4·88
1921	4·94	5·61	4·42	4·31
1931	4·76	5·61	4·20	4·17

From Statement XVI the following information may be deduced:—

(1) The Census of 1931 records for each province a smaller urban household than in 1871. The decrease, however, is much smaller than it is for the rural household except for the province of Quebec where the urban household decreased by 0·04 while the rural household increased by 0·11.

(2) Ontario is the only province to record a drop of 1 person during the period 1871–1931.

Reviewing Statements XII, XIV and XVI, it is seen that the highest average size for the rural, urban and general household at any time is shown by Prince Edward Island with 6·15,

5·50 and 6·06 persons per respective household in 1881, and that the lowest at any time is shown by Ontario with 4·27, 4·16 and 4·20, respectively, in 1931. Quebec ranks highest in each division for 1931 with an average size of 5·86 rural, 5·04 urban and 5·32 general.

XVIII.—DECREASE[1] IN AVERAGE NUMBER OF PERSONS PER URBAN HOUSEHOLD, BY DECADES EASTERN CANADA AND PROVINCES, 1871-1931

Decade	Eastern Canada	Ontario	Quebec	Nova Scotia	New Brunswick	Prince Edward Island
1871-81	0·21	0·30	0·20	−0·09	0·08	-
1881-91	−0·12	−0·03	−0·29	−0·17	0·03	0·17
1891-1901	0·14	0·26	−0·02	0·09	0·14	0·14
1901-11	0·08	0·14	−0·01	0·05	0·04	0·39
1911-21	0·26	0·35	0·14	0·19	0·05	0·15
1921-31	0·07	0·10	0·02	0·21	0·20	−0·09
1871-1931	0·64	1·12	0·04	0·28	0·54	0·70

[1] Minus sign denotes increase.

It is worth remarking from Statements XIII, XV and XVIII that the alternate recurrence of a small and large decrease, previously noticed for Canada and Eastern Canada, is generally present in the size variations of the rural and urban household for each one of the five eastern provinces.

XIX.—AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, RURAL AND URBAN, MARITIME PROVINCES, 1871-1931

Census Year	Population			Households			Persons per Household		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
NOVA SCOTIA									
1871	387,800	353,284	34,516	67,811	61,003	6,808	5·72	5·79	5·07
1881	440,572	374,647	65,925	79,596	66,831	12,765	5·54	5·61	5·16
1891	450,396	351,176	99,220	83,733	65,104	18,629	5·38	5·39	5·33
1901	459,574	317,893	141,681	89,386	62,359	27,027	5·14	5·10	5·24
1911	492,338	318,297	174,041	98,491	64,974	33,517	5·00	4·90	5·19
1921	523,837	296,799	227,038	108,723	63,283	45,440	4·82	4·69	5·00
1931	512,846	281,192	231,654	109,857	61,505	48,352	4·67	4·57	4·70
NEW BRUNSWICK									
1871	285,594	235,381	50,213	49,384	39,639	9,745	5·78	5·94	5·15
1881	321,233	262,141	59,092	56,948	45,301	11,647	5·64	5·79	5·07
1891	321,263	255,055	66,208	58,462	45,318	13,144	5·50	5·63	5·04
1001	331,120	245,555	85,565	62,695	45,238	17,457	5·28	5·43	4·00
1911	351,889	255,991	95,898	67,093	47,352	19,741	5·24	5·41	4·80
1921	387,876	263,432	124,444	76,949	51,069	25,880	5·04	5·16	4·81
1931	408,219	279,279	128,940	81,562	53,602	27,960	5·00	5·21	4·61
PRINCE EDWARD ISLAND									
1881	108,891	94,575	14,316	17,973	15,370	2,603	6·06	6·15	5·50
1891	109,078	95,038	14,040	18,601	15,965	2,636	5·86	5·95	5·33
1901	103,259	87,403	15,856	18,746	15,691	3,055	5·51	5·57	5·19
1911	93,728	79,068	14,660	18,425	15,373	3,052	5·09	5·14	4·80
1921	88,615	69,522	19,093	18,801	14,696	4,105	4·71	4·73	4·65
1931	88,038	67,653	20,385	18,816	14,514	4,302	4·68	4·66	4·74

Nova Scotia since 1901 and Prince Edward Island in 1931 present the oddity of a larger average size for urban than for rural households.

The decrease in size is larger for the rural than for the urban household at each decade for Prince Edward Island, at each decade but the last for Nova Scotia, and at four decades out of six for New Brunswick.

Prince Edward Island has the largest average size of household, rural and general, in 1881, 1891 and 1901; New Brunswick claims it for 1871, 1911, 1921 and 1931, while Nova Scotia has the largest urban household of the three since 1901.

XX.—AVERAGE NUMBER OF PERSONS PER HOUSEHOLD, RURAL AND URBAN, ONTARIO, 1861-1931, AND QUEBEC, 1667-1931

Census Year	Population			Households			Persons per Household		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
ONTARIO									
1861	1,396,091	1,292,207	103,884[1]	219,511	200,867	18,644	6·36	6·43	5·57
1871	1,620,851	1,264,854	355,997	292,221	224,841	67,380	5·55	5·63	5·28
1881	1,926,922	1,352,194	574,728	366,444	251,076	115,368	5·26	5·39	4·98
1891	2,114,321	1,314,145	800,176	414,798	254,985	159,813	5·10	5·15	5·01
1901	2,182,947	1,225,228	956,719	455,264	254,010	201,254	4·79	4·83	4·75
1911	2,527,292	1,199,722	1,327,570	545,229	257,504	287,725	4·64	4·66	4·61
1921	2,933,662	1,227,030	1,706,632	681,629	280,642	400,987	4·30	4·37	4·26
1931	3,431,683	1,335,691	2,095,992	816,851	312,877	503,974	4·20	4·27	4·16
QUEBEC									
1667	3,918	2,501	1,417	692	456	236	5·66	5·48	6·00
1681	9,677	6,764	2,913	1,591	1,142	449	6·08	5·92	6·49
1707	17,530	13,936	3,594	2,854	2,304	550	6·14	6·05	6·53
1721	25,923	18,179	7,744	4,265	2,880	1,385	6·08	6·31	5·59
1736	39,586	30,867	8,719	6,853	5,298	1,555	5·78	5·83	5·61
1861	1,111,566	958,177	153,389[2]	177,457	148,079	29,378	6·26	6·47	5·22
1871	1,191,516	926,093	265,423	213,303	161,044	52,259	5·59	5·75	5·08
1881	1,359,027	981,225	377,802	254,841	177,474	77,367	5·33	5·53	4·88
1891	1,488,535	985,680	502,855	271,991	174,807	97,184	5·47	5·64	5·17
1901	1,648,898	996,011	652,887	307,304	181,507	125,797	5·37	5·49	5·19
1911	2,005,776	1,036,879	968,897	371,590	185,417	186,173	5·40	5·59	5·20
1921	2,360,665	1,038,096	1,322,569	442,256	180,849	261,407	5·34	5·74	5·06
1931	2,874,255	1,060,649	1,813,606	540,571	180,919	359,652	5·32	5·86	5·04

[1]Urban, for 1861, consists of: Hamilton, Kingston, London, Ottawa, Toronto.
[2]Urban consists (for 1861) of: Montreal, Quebec, Trois-Rivières and Sherbrooke.

In the province of Ontario the average size of the rural household is larger than that of the urban at each census since 1861, but the difference between the two is very small after 1901. Since 1861 the rural household has decreased by 2·16, the urban by 1·41 and the general household by 2·16.

In the province of Quebec the average size of the rural household is larger than that of the urban at each census after 1861. The difference between the two sizes, which was 1·25 in 1861, gradually decreased until 1901 but has been widening since, due to increases in the size of the rural occurring simultaneously with decreases in the size of the urban household. Since 1861 the rural household has decreased by 0·61, the urban by 0·18 and the general household by 0·94.

Since 1861 the average rural household in the province of Quebec has been of larger size than in the province of Ontario; the same is true of the general household since 1871 and for the urban household since 1891. In each of these three divisions, the decrease shown by the province of Ontario over the period 1861-1931 is more than 1 person greater than in Quebec.

XXI.—AMOUNT BY WHICH AVERAGE SIZE OF RURAL HOUSEHOLD EXCEEDS THAT OF URBAN, EASTERN CANADA AND PROVINCES, 1861-1931

Census Year	Eastern Canada	Ontario	Quebec	Nova Scotia	New Brunswick	Prince Edward Island
1861	1·09	0·86	1·25	–	–	–
1871	0·53	0·35	0·67	0·72	0·79	–
1881	0·54	0·41	0·65	0·45	0·72	0·65
1891	0·31	0·14	0·47	0·06	0·59	0·62
1901	0·19	0·08	0·30	−0·14	0·53	0·38
1911	0·19	0·05	0·39	−0·29	0·55	0·34
1921	0·29	0·11	0·68	−0·31	0·35	0·08
1931	0·31	0·11	0·82	−0·22	0·60	−0·08

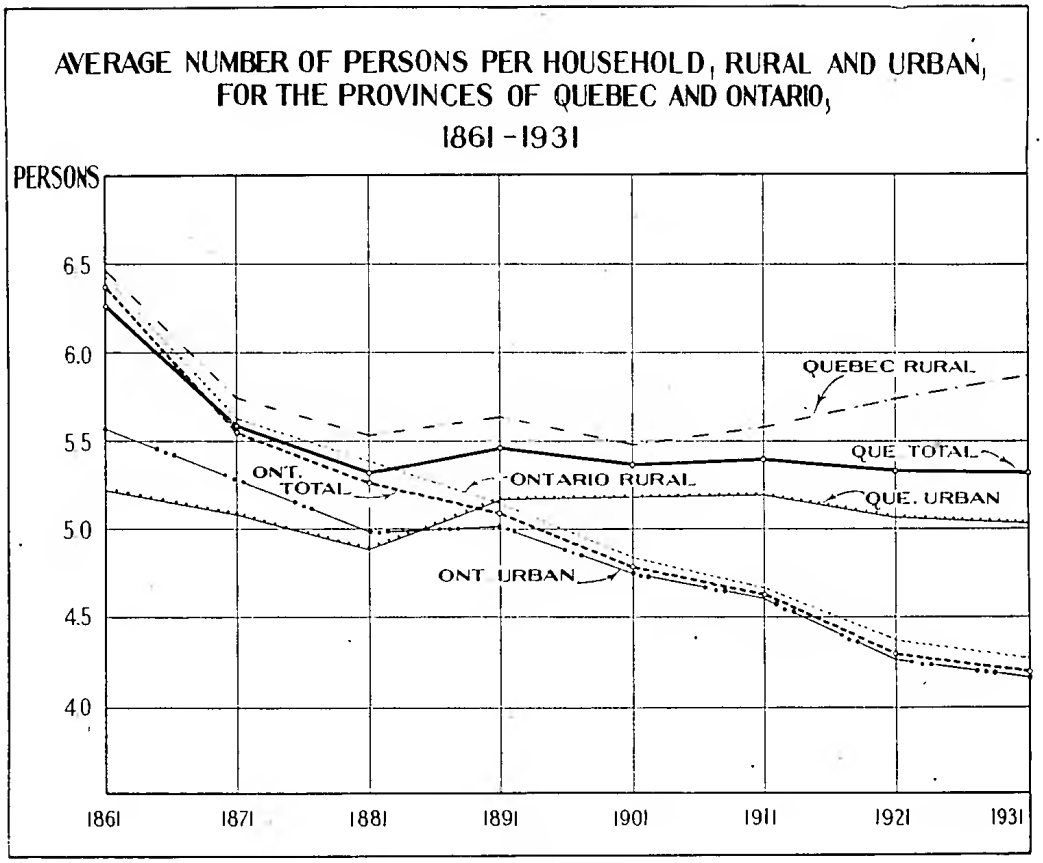

Chart 3

Variations in Average Size of the Rural Household, by Counties, in Quebec.—It has been noted previously that the average size of the rural household in the province of Quebec has been increasing since 1901 (see Statement XX, page 37). For 1931 Quebec shared that rather unexpected experience with New Brunswick, but for 1911 and 1921 Quebec was the only one of the five eastern provinces to register an increase. Because of the amount of work involved as well as the influence of the period of depression immediately preceding 1931, it was found advisable to study only the two decades 1901-11 and 1911-21.

In order to ascertain whether or not the increase in the size of the rural household in the province of Quebec was due to the recent settlement of newly opened counties, to the influence of some counties having abnormally large households or to the joint action of both factors as was anticipated, rural Quebec was broken up into counties. The result of the investigation points definitely to the increase being general and not attributable to certain counties.

From Statement XXII it will be seen that, out of 66 counties, only 13 show a decrease (the decreases being under 0·10 for 6 of them). Of the remaining 53 counties with larger average households in 1921 than in 1901, 28 show an increase of 0·25 or more—0·25 being the average increase for the province; 13 counties have increases of 0·50 or more, with 4 of them, Abitibi, Temiskaming (grouped together), Montreal and Jesus Islands and Saguenay, showing respectively increases of 1·47, 1·11 and 1·14. In these four counties the causes for the increases are very simple and obvious. In 1901, Abitibi and Temiskaming were still unorganized districts with about one-third their population composed of Indians and half-breeds; in 1921, however, 11 persons out of 13 were of French origin. The reason for the higher average size of the rural household in Montreal and Jesus Islands lies in the fact that between 1901 and 1921 there was a large increase in the number of inmates in the institutions located in the rural parts of the two islands and that in 1921 there was a drop of one-fifth in the rural population on the islands due to incorporation. Thus the influence of the institutions on the average size of the rural household was of first importance and it explains the unusual size of 7·08 in 1921.

Again, reviewing Statement XXII, 38 counties show less than the average increase for the province, *viz.*, 0·25, and 28 counties are at or above that average. Thirteen counties show a decrease while 13 others register an increase of 0·50 or more. An increase better distributed over the 66 counties could scarcely be expected.

From these observations it is plain that the increase in the average size of the rural household during the period 1901-21, in the province of Quebec, was not a phenomenon peculiar to a limited number of counties having extra large households but was a general increase witnessed throughout the province.

XXII.—VARIATIONS IN THE SIZE OF THE RURAL HOUSEHOLD, BY COUNTIES, LISTED ACCORDING TO THE SIZE OF THEIR RURAL HOUSEHOLD IN 1901, QUEBEC, 1901-1921

County	Variations in Size of Rural Household			
	Size in 1901	Variation, 1901-1921	Increase	Decrease
Chicoutimi	6·57		0·13	–
Témiscouata	6·28	——	–	0·14
Bonaventure	6·21	——	–	0·29
Rimouski	6·10		0·38	–
Hull	6·01	——	–	0·08
Kamouraska	5·97		0·02	–
Montreal and Jesus Islands	5·97	....	1·11	–
Pontiac	5·92	——	–	0·59
Gaspé	5·90		0·12	–
Lac-St-Jean	5·89	....	0·64	–
Charlevoix	5·82	....	0·64	–
Matane	5·75	....	0·52	–
Vaudreuil	5·75		0·10	–
Beauce	5·72		0·38	–
Laprairie	5·67	——	–	0·51
Montmorency	5·64		0·22	–
Champlain	5·62	....	0·67	–
Quebec	5·62	....	0·69	–
Yamaska	5·61		0·25	–
Labelle and Papineau	5·59		0·13	–
St-Maurice	5·59		0·02	–
Saguenay	5·58	....	1·14	–
Nicolet	5·57		0·04	–
Frontenac	5·55		0·34	–
Lotbinière	5·54		0·40	–
Arthabaska	5·52		0·45	–
Lévis	5·51		0·11	–
Wolfe	5·50		0·17	–
Argenteuil	5·48	——	–	0·20
L'Islet	5·48		0·40	–
Portneuf	5·48		0·42	–
Soulanges	5·48		0·13	–
Beauharnois	5·47	——	0·29	–
Napierville	5·46		–	0·06
Bellechasse	5·44		0·14	–
Montmagny	5·41		0·13	–
Chambly-Verchères	5·39		0·22	–
Mégantic	5·35		0·30	–
Terrebonne	5·35		0·03	–
Berthier	5·31		0·17	–
Richelieu	5·31		0·21	–
Deux-Montagnes	5·30		0·38	–
Dorchester	5·30	....	0·61	–
Maskinongé	5·30	....	0·54	–
Drummond	5·25		0·18	–
Joliette	5·19		0·28	–
Sherbrooke	5·15	——	–	0·23
Shefford	5·14	——	–	0·09
Chateauguay	5·12	——	–	0·05
St-Jean	5·11		0·05	–
L'Assomption	5·04	——	–	0·01
Huntingdon	5·03	——	–	0·49
Iberville	5·03		0·28	–
Montcalm	5·02		0·20	–
Compton	4·98		0·29	–
Richmond	4·98	....	0·50	–
Rouville	4·97		0·19	–
Bagot	4·96	....	0·54	–
St-Hyacinthe	4·95	——	–	0·05
Missisquoi	4·72		0·15	–
Brome	4·69		0·04	–
Stanstead	4·57		0·26	–
Abitibi and Temiskaming	4·15	....	1·47	–

.... increase of 0·50 or more.
—— decrease.

Statement XXII indicates that there is very little relation between the size of the household in 1901 and the increase or decrease between 1901 and 1921. Amongst the counties with high averages in 1901 some record an increase of 0·50, others a decrease. The same applies to the counties with low averages in 1901. However, if one takes the 33 counties with the highest average sizes in 1901 and adds up their respective increases or decreases, the total, 7·81, is slightly larger than that for the 33 other counties, being 6·47.

It is of interest to know if racial origin is a factor in the increase of the average size of the rural household in the province of Quebec between 1901 and 1921. This is brought out in Statement XXIII.

XXIII.—PROPORTION OF THE RURAL POPULATION OF FRENCH ORIGIN IN THE COUNTIES THAT (a) GAINED THE LARGEST INCREASE, (b) SUFFERED THE LARGEST DECREASE, IN THE SIZE OF THEIR RURAL HOUSEHOLD, QUEBEC, 1901-1921

County	Increase or Decrease[1] in Household Size	Rural Population of French Origin		
		P.C. in 1901	P.C. in 1921	Increase[1] in P.C., 1901-1921
COUNTIES HAVING LARGEST INCREASE IN SIZE OF RURAL HOUSEHOLD				
Abitibi and Temiskaming	1·47	38·1	83·9	45·8
Saguenay	1·14	79·3	67·5	−11·8
Montreal and Jesus Islands	1·11	90·4	88·3	− 2·1
Quebec	0·69	85·3	86·4	1·1
Champlain	0·67	96·4	97·1	0·7
Charlevoix	0·64	98·7	99·2	0·5
Lac-St-Jean	0·64	98·8	99·6	0·8
Dorchester	0·61	86·1	95·2	9·1
Bagot	0·54	98·9	99·1	0·2
Maskinongé	0·54	98·4	99·6	1·2
Matane	0·52	94·7	99·0	4·3
Richmond	0·50	63·8	77·5	13·7
COUNTIES HAVING LARGEST DECREASE IN SIZE OF RURAL HOUSEHOLD				
L'Assomption	−0·01	97·2	96·1	− 1·1
Chateauguay	−0·05	68·3	78·6	10·3
St-Hyacinthe	−0·05	99·7	99·9	0·2
Napierville	−0·06	94·9	97·7	2·8
Hull	−0·08	52·2	59·8	7·6
Shefford	−0·09	78·4	88·6	10·2
Témiscouata	−0·14	98·0	98·2	0·2
Argenteuil	−0·20	43·3	50·1	6·8
Sherbrooke	−0·23	51·6	62·0	10·4
Bonaventure	−0·29	69·6	73·1	3·5
Huntingdon	−0·49	37·0	45·1	8·1
Laprairie	−0·51	76·6	74·0	− 2·6
Pontiac	−0·59	30·3	35·8	5·5

[1]Minus sign denotes decrease.

Statement XXIII furnishes ample proof of the importance of racial origin in influencing the size of the rural household. In the first group where the mean proportion of the French population per county in 1901 is 85·7, there is an average increase in the size of the household of 0·76; on the other hand, in the second group where the mean proportion of the French population is only 69·8, there is an average size decrease of 0·21. Moreover, from the second half of the statement it is seen that the smaller the proportion of the French population in individual counties, the larger the decrease in the size of the household in these counties.

This study of the influence of racial origin on the size of the household can be carried further by comparison of counties with a rural population 90 p.c. or more French and those with 60 p.c. or less of French origin.

XXIV.—VARIATIONS IN THE SIZE OF THE RURAL HOUSEHOLD FOR COUNTIES WITH A FRENCH RURAL POPULATION OF (a) 90 P.C. OR MORE, (b) 60 P.C. OR LESS, IN 1901, QUEBEC, 1901-1921

County	P.C. of French Origin	Size Variation, 1901-1921	County	P.C. of French Origin	Size Variation, 1901-1921
COUNTIES HAVING RURAL POPULATION 90 P.C. OR MORE FRENCH					
L'Islet	99·8	0·40	L'Assomption	97·2	−0·01
Kamouraska	99·7	0·02	St-Maurice	97·2	0·02
St-Hyacinthe	99·7	−0·05	Arthabaska	96·6	0·45
Bellechasse	99·6	0·14	Champlain	96·4	0·67
Montmagny	99·5	0·13	Lévis	96·3	0·11
Richelieu	99·5	0·21	Rouville	96·1	0·10
Chicoutimi	99·0	0·13	Chambly-Verchères	96·0	0·22
Bagot	98·9	0·54	Iberville	95·5	0·28
Berthier	98·8	0·17	Napierville	94·9	−0·06
Lac-St-Jean	98·8	0·64	Terrebonne	94·9	0·03
Charlevoix	98·7	0·64	Matane	94·7	0·52
Montmorency	98·5	0·22	Portneuf	94·3	0·42
Maskinongé	98·4	0·54	Soulanges	94·1	0·13
Nicolet	98·2	0·04	Lotbinière	93·3	0·40
Rimouski	98·2	0·38	Beauharnois	93·2	0·29
Beauce	98·1	0·38	Vaudreuil	92·5	0·10
Témiscouata	98·0	−0·14	Montcalm	92·5	0·20
Yamaska	97·8	0·25	Wolfe	91·5	0·17
Joliette	97·5	0·28	Montreal and Jesus Islands	90·4	1·11
COUNTIES HAVING RURAL POPULATION 60 P.C. OR LESS FRENCH					
Hull	52·2	−0·08	Abitibi and Temiskaming	38·1	1·47
Sherbrooke	51·6	−0·23	Huntingdon	37·0	−0·49
Compton	50·1	0·29	Stanstead	36·7	0·26
Missisquoi	48·4	0·15	Brome	33·9	0·04
Argenteuil	43·3	−0·20	Pontiac	30·3	−0·59

The average size increase is 0·27 per county in the first part of Statement XXIV and 0·06 in the second. It is also conclusive that the counties with a rural population of 60 p.c. or less French, which nevertheless showed an increase between 1901 and 1921 in the size of their rural households, are counties in which the proportion of the French population increased considerably during that period. This is true of every one of the 5 increasing counties mentioned in the second part of the tabulation.

However, as it was possible that geographical location might have been the real determining factor of increase or decrease in the size of the household and racial origin merely the apparent factor, it was thought advisable to postpone drawing conclusions until a study had been made of the size of the rural household according to the location of the different counties.

XXV.—VARIATIONS IN THE SIZE OF THE RURAL HOUSEHOLD ACCORDING TO LOCATION OF COUNTIES AND PROPORTION OF FRENCH POPULATION, QUEBEC, BY SPECIFIED REGIONS, 1901-1921

County	Variations in Size of Household			P.C. of French Origin	
	Size in 1901	Increase, 1901-1921	Decrease, 1901-1921	1901	1921
1—OTTAWA REGION					
Abitibi and Temiskaming	4·15	1·47	–	38·1	83·9
Pontiac	5·92	–	0·59	30·3	35·8
Hull	6·01	–	0·08	52·2	59·8
Labelle and Papineau	5·59	0·13	–	79·3	87·8
Argenteuil	5·48	–	0·20	43·3	50·1
Deux-Montagnes	5·30	0·38	–	75·2	93·0
Terrebonne	5·35	0·03	–	94·9	92·2
L'Assomption	5·04	–	0·01	97·2	96·1
2—SAINT-MAURICE REGION					
Montcalm	5·02	0·20	–	92·5	93·9
Joliette	5·19	0·28	–	97·5	97·8
Berthier	5·31	0·17	–	98·8	99·0
Maskinongé	5·30	0·54	–	98·4	99·6
St-Maurice	5·59	0·02	–	97·2	98·6
Champlain	5·62	0·67	–	96·4	97·1

XXV.—VARIATIONS IN THE SIZE OF THE RURAL HOUSEHOLD ACCORDING TO LOCATION OF COUNTIES AND PROPORTION OF FRENCH POPULATION, QUEBEC, BY SPECIFIED REGIONS, 1901-1921—Con.

County	Variations in Size of Household			P.C. of French Origin	
	Size in 1901	Increase, 1901-1921	Decrease, 1901-1921	1901	1921
3—SAGUENAY REGION					
Lac-Saint-Jean	5·89	0·64	–	98·8	99·6
Chicoutimi	6·57	0·13	–	99·0	98·5
Saguenay	5·58	1·14	–	79·3	67·5
4—QUEBEC REGION					
Portneuf	5·48	0·42	–	94·3	95·6
Quebec	5·62	0·69	–	85·3	86·4
Montmorency	5·64	0·22	–	98·5	98·8
Charlevoix	5·82	0·64	–	98·7	99·2
5—LOWER ST. LAWRENCE REGION					
Montmagny	5·41	0·13	–	99·5	99·3
L'Islet	5·48	0·40	–	99·8	99·0
Kamouraska	5·97	0·02	–	99·7	99·4
Témiscouata	6·28	–	0·14	98·0	98·2
Rimouski	6·10	0·38	–	98·2	99·5
Matane	5·75	0·52	–	94·7	99·0
Bonaventure	6·21	–	0·29	69·6	73·1
Gaspé	5·90	0·12	–	74·9	77·7
6—LA CHAUDIÈRE REGION					
Bellechasse	5·44	0·14	–	99·6	99·9
Dorchester	5·30	0·61	–	86·1	95·2
Beauce	5·72	0·38	–	98·1	99·0
Frontenac	5·55	0·34	–	88·6	95·6
Lotbinière	5·54	0·40	–	93·3	96·0
Lévis	5·51	0·11	–	96·3	97·5
7—EASTERN TOWNSHIPS REGION					
Mégantic	5·35	0·30	–	74·9	85·5
Wolfe	5·50	0·17	–	91·5	96·0
Compton	4·98	0·29	–	50·1	66·3
Stanstead	4·57	0·26	–	36·7	55·8
Sherbrooke	5·15	–	0·23	51·6	62·0
Richmond	4·98	0·50	–	63·8	77·5
Arthabaska	5·52	0·45	–	96·6	98·0
Nicolet	5·57	0·04	–	98·2	98·8
Drummond	5·25	0·18	–	82·7	93·3
Shefford	5·14	–	0·09	78·4	88·6
Brome	4·69	0·04	–	33·9	46·1
Missisquoi	4·72	0·15	–	48·4	66·3
Bagot	4·96	0·54	–	98·9	99·1
Yamaska	5·61	0·25	–	97·8	98·1
8—RICHELIEU REGION					
Iberville	5·03	0·28	–	95·5	97·0
Rouville	4·97	0·19	–	96·1	95·4
St-Hyacinthe	4·95	–	0·05	99·7	99·9
Richelieu	5·31	0·21	–	99·5	98·5
Chambly-Verchères	5·39	0·22	–	96·0	88·0
Laprairie	5·67	–	0·51	76·6	74·0
St-Jean	5·11	0·05	–	85·2	89·6
Napierville	5·46	–	0·06	94·9	97·7
Huntingdon	5·03	–	0·49	37·0	45·1
Chateauguay	5·12	–	0·05	68·3	78·6
Beauharnois	5·47	0·29	–	93·2	95·2
Soulanges	5·48	0·13	–	94·1	92·1
Vaudreuil	5·75	0·10	–	92·5	92·7
9—MONTREAL REGION					
Montreal and Jesus Islands	5·97	1·11	–	90·4	88·3

The 13 counties that suffered a decrease in the average size of their households between 1901 and 1921 are distributed among four of the nine regions. Of the five regions where no decrease is recorded, two have no county with a population less than 90 p.c. French, two others have none with a population less than 85 p.c. French and the fifth one has none with less than a 79 p.c. French population.

If a particular study is made of the counties where the proportion of the French population is less than 50 p.c., the dependence of the variations in the size of the household on the proportion of the French population in 1901 or upon its increase between 1901 and 1921 is well marked.

XXVI.—AVERAGE SIZE OF THE HOUSEHOLD IN COUNTIES WITH A POPULATION LESS THAN 50 P.C. FRENCH IN 1901, QUEBEC, 1901-1921

County	Region	Variations in Size of Household			P.C. of French Origin	
		Size in 1901	Decrease, 1901-21	Increase, 1901-21	1901	1921
Pontiac	1	5·92	0·59	-	30·3	35·8
Brome	7	4·69	-	0·04	33·9	46·1
Stanstead	7	4·57	-	0·26	36·7	55·8
Huntingdon	8	5·03	0·49	-	37·0	45·1
Abitibi-Temiskaming	1	4·15	-	1·47	38·1	83·9
Argenteuil	1	5·48	0·20	-	43·3	50·1
Missisquoi	7	4·72	-	0·15	48·4	66·3

The 4 counties which, notwithstanding their small proportion of French origin population, recorded increases in the size of their households between 1901 and 1921, are counties which each had a small household size in 1901. Naturally, a small size could be raised easily by the large gain in French population that these counties experienced during that period. It is also significant that the dimension of the increase in the average size of their households is proportional to the dimension of the increase in the proportion of French origin population, as the following figures demonstrate:—

County	Household Size Increase	French Proportion Increase
Brome	0·04	12·2
Stanstead	0·15	17·9
Abitibi-Temiskaming	0·26	19·1
Argenteuil	1·47	45·8

The case is strengthened still further by a comparison of the sizes of the household in counties with a very high percentage of French population with the sizes of the household in other counties in the same region, the size in Argenteuil, for instance, with that in Deux-Montagnes or Terrebonne, or the size in Huntingdon with that in Beauharnois.

However, the significance of other factors should not be allowed to minimize the influence of the geographical factor on the size of household, for while it has been demonstrated that the increasing size of the rural household in the province of Quebec was due to the counties with a large—or a greatly increasing—proportion of French population, there is no doubt that location plays an important part in the variation of the size of household. Thus, for instance, in the two regions, the Eastern Townships and the Richelieu, naturally the first to provide emigration across the border, the average size of household, in 1901 and in 1921, is decidedly smaller than in the rest of the province. At the same time, however, the household was larger in the counties with higher proportions of French origin than in other counties in the same regions.

CHAPTER III

RECURRING LARGE AND SMALL DECREASES IN AVERAGE SIZE OF HOUSEHOLD, EASTERN CANADA, 1871-1931

From the different statements in Chapter II the conclusion is reached that the average size of the Canadian household, from 1871 to 1931, was influenced by a number of factors. One of them, however, stands out as largely responsible for the variations in the size of the decrease from decade to decade; this all-important factor is population movement. Due to the importance as well as the complexity of the movement, this chapter is devoted to a study of the effects of such movement on the size of the household, and to how it happened to cause a recurrence of slight and large decreases in consecutive pairs of decades from 1871 to 1931.

Various Movements of Population and Their Influence on Size of Household.—The influence of the movement of population on the size of the household varies according to the origin and the destination of the movement. In Canada, there were three main currents: one ran from the old into the new counties; another, swollen from many sources, reached the West and the United States, and a third, feeding on immigration and on the exodus of native rural population, invaded urban centres.

The larger decreases in the size of the household may be identified with the first current and the smaller decreases with the others. For instance, the period 1871 to 1901, corresponding to the era of settlement in Eastern Canada, saw the size of the eastern household decrease by 0·54; but the next period, 1901-31, the era of development of the large cities and of a general movement of urban centres, whether large or small, saw it decrease by only 0·39. It is also highly significant that the size of the rural household decreased by 0·57 in the first period and by only 0·28 in the second one.

However, divisions by periods of thirty years are too wide to permit an adequate study of the trend of household size, or a true measurement of the respective importance of the principal factors which exerted an influence on that size. For a young and progressive country like Canada, where the movements of population from 1871 to 1931 were so numerous and diversified, even periods of ten years are too extended. It will be noticed from Statement XXVII that a large decrease in the household size, rural and urban, for one decade alternates with a small decrease in the next, for each one of the five eastern provinces, from 1871 to 1931.

XXVII.—DECREASE[1] PER DECADE IN AVERAGE SIZE OF HOUSEHOLD, RURAL AND URBAN, EASTERN CANADA, PROVINCES AND CITIES, 1871-1931

Province and City	1871-1881	1881-1891	1891-1901	1901-1911	1911-1921	1921-1931
EASTERN CANADA	0·24	0·07	0·23	0·09	0·23	0·07
Rural	0·20	0·11	0·26	0·08	0·16	0·04
Urban	0·21	−0·12	0·14	0·08	0·26	0·07
Ontario	0·29	0·16	0·31	0·15	0·34	0·10
Rural	0·24	0·24	0·32	0·17	0·29	0·10
Urban	0·30	−0·03	0·28	0·14	0·35	0·10
Quebec	0·26	−0·14	0·10	−0·03	0·06	0·02
Rural	0·22	−0·11	0·15	−0·10	−0·15	−0·12
Urban	0·20	−0·29	−0·02	−0·01	0·14	0·02
Nova Scotia	0·18	0·16	0·24	0·14	0·18	0·15
Rural	0·18	0·22	0·29	0·20	0·21	0·12
Urban	−0·09	−0·17	0·09	0·05	0·19	0·21
New Brunswick	0·14	0·14	0·22	0·04	0·20	0·04
Rural	0·15	0·16	0·20	0·02	0·25	−0·05
Urban	0·08	0·03	0·14	0·04	0·05	0·20
Prince Edward Island	-	0·20	0·35	0·42	0·38	0·03
Rural	-	0·20	0·38	0·43	0·41	0·07
Urban	-	0·17	0·14	0·39	0·15	−0·09
Montreal	0·20	−0·17	−0·04	−0·01	0·24	0·18
Quebec	0·38	−0·87	0·02	−0·02	−0·25	-
Toronto	0·45	−0·48	0·18	0·16	0·53	0·22
Hamilton	0·12	0·04	0·27	−0·06	0·57	0·14

[1] Minus sing denotes increase.

In order to determine the causes responsible for this peculiar behaviour, each decade was studied separately and the common points as well as the disparities of all six decades were minutely compared, with the following results:—

The size of the household underwent a large drop in the decades 1871-81, 1891-1901 and 1911-21, with respective drops of 0·24, 0·23 and 0·23. The first two decades were marked by the heavy exodus from the old and thickly settled counties to the new and thinly settled counties some of which had no recorded population until then. The decade 1911-21 witnessed the distribution and the establishment all over the country of the 887,000 immigrants that had been retained out of the 1,847,000 arrivals from 1901 to 1911; it witnessed also, for four years, a considerable exodus of young Canadians, native born and immigrants, going overseas for active service. The result—an increase in married people followed by a decrease in single people—was recorded by the 1921 Census: Canada had 27·93 p.c. more households than in 1911 for a population only 22·02 p.c. larger; Eastern Canada, 20·7 p.c. more households for a population 15·1 p.c. larger.

The decreases in the intervening decades, 1881-91, 1901-11, 1921-31, were 0·07, 0·09 and 0·07 respectively. These three decades differ from the previous ones by the citywards movement of population which characterizes them. In the decade ended in 1891, the eastern cities accounted for 83·8 p.c. of the total population growth of Canada; in that ended in 1911, they recorded only 39·0 p.c. of the total increase for Canada, but were responsible for 97·7 p.c. of the growth in Eastern Canada; in the decade ended 1931, they accounted for 56·1 p.c. of the total increase in Canada. Great care should be exercised, however, and such percentages alone should not be used in reaching conclusions. A comparison of the distribution between rural and urban of the increase in population in Eastern Canada is not sufficient. Urban centres may well be responsible for the whole increase of population in Eastern Canada, without it necessarily meaning that the population which the rural parts lost was transferred to the cities: it may have passed to the United States or to Western Canada. In the three decades in question, however, there really was in Eastern Canada a marked movement from rural parts to urban centres.*

An elaborate comparative study of the movement of population and the size of the household leads to the logical conclusion that the larger decreases in such size are to be attributed to the migration to newly settled counties and the smaller ones to the migration to urban centres. Is it equally logical that these movements should have produced these results? If the viewpoint is accepted that a large drop in size of household is due to an increase in the number of households proportionately much larger than the increase in population, then the thing to look for is the cause or causes that created a relatively greater number of households when the movement was to rural parts than when it was to urban centres.

Considering first the movement to the newly settled counties, it is found that this movement was, on the whole, made up of small families. Because there was no more room for expansion in the old counties, where the lands had been subdivided and re-subdivided, the young people, who so far had been living with their parents, were moved by the law of necessity to look outside for their maintenance. Their exodus, which originated in Quebec, was common to Quebec and Ontario between 1871 and 1881, and extended to the Maritime Provinces in the decade 1891-1901. It can be seen in Statement XV that the decrease in the size of the rural household followed a similar trend.

Now, when young people left their native county to go to the United States or to Western Canada, they decreased the size of the household in Eastern Canada; but, when they left to go and establish themselves in thinly settled counties of this same Eastern Canada, they decreased it doubly, for they not only reduced the number of large households but also increased the number of small households. The following example illustrates the importance of the destination of outgoing native population:—

A—There is a population of 5,000 souls in the province of Ontario contained in 1,000 households.

B—One hundred young persons, fifty boys and fifty girls, leave the province to go to the United States.

C—The same fifty boys and fifty girls, instead of going over to the United States, decide to get married *inter se* and to settle in a Northern Ontario county.

*See: *Analysis of the Stages in the Growth of Population in Canada*, by M. C. MacLean, Dominion Bureau of Statistics, 1935.

Under these circumstances the size of the household in the province would be the following in each case:—

	Population	Households	Persons per Household
A	5,000	1,000	5·0
B	4,900	1,000	4·9
C	5,000	1,050	4·76

We have here a simple illustration of what happens when a part of the population takes itself to new rural areas within the province: households increase at a faster rate than the population, hence the reduced size of the household.

On the other hand, the citywards movement in the intermediate decades created an increase in the population of the cities without creating the corresponding increase in households. Even at first sight this appears logical and consistent with the types of household the cities present and with the type of immigration they receive.

The large cities grew from outside sources, mainly migration from neighbouring counties and foreign immigration. The trek from rural parts to cities consists mostly of two groups: complete families and single young men or young women.

1. *Complete Families.*—A family head, having decided to leave his farm and try his luck somewhere else, will move to the nearest city where he knows what conditions to expect, rather than to the far West or to the United States. He will also prefer the large city to a small town or village, because of his hope that in the large urban centre all the members of his family will be able to find employment due to the variety of economic activities in such a centre.

2. *Single Young Men or Young Women.*—Regularly, the number of women moving from rural into urban communities is greater than the number of men doing so. There being very little female employment in rural communities, the young women come to the cities either to take up domestic service, thus increasing the size of the household they enter, or to find employment in business or in industry, in which case they also increase the size of the urban household as they generally take rooms with private families. The young men who compose the other important part of this movement from country to city, also contribute to the increase in size of the urban household by taking up rooms in private families or in boarding houses.

However, these two groups form the more or less regular movement of rural population to urban centres—and in the case of female population a rather recent movement—but, important as it is, it is not sufficient to account for the maintenance of such a high urban household size (high, when we consider all the factors that tend to bring down the size of the private family in a modern city). To the citywards one-way traffic of native population must be added the penetration of cities by immigrants. The penetration was of two sorts. First, certain cities, among the largest in Canada, acted as points of distribution of the recently arrived immigration. In periods of heavy immigration, accommodation had difficulty in keeping pace with the sudden increase in population, and, as a result, the size of the household in these cities was unduly augmented. Superficially, one might think that immigration, composed mostly of single young men or married men without their families, would have decreased the size of the household. Such was not the case, however, when it was directed towards urban centres, especially large cities. The newcomers, particularly the Central or Southern European immigrants, in the periods of heavy immigration, looked not for houses but for rooms, except in the relatively few cases where, as groups, they rented houses and stayed together to cut down expenses and to be among people speaking their native tongue.

Except for very special purposes, such as the building of railroads, the industrial development of Canada could absorb but a small fraction of the immigrants arriving in numbers out of all proportion to the native population. In certain decades only one out of twenty, or even thirty-five, immigrants remained in Canada, the others going to the United States. In these decades, emigration coupled with a lull in immigration in the two or three years preceding the census and a movement of the native rural population to new rural areas instead of to the cities would produce a large decrease in the size of the household.

Then, there was the penetration by immigrants who, having found work here and there in the rural parts, flocked back to the cities once it was finished (as in 1886 after the completion of the C.P.R.), and grouped in little colonies in certain zones, crowded in cheap houses. Zones of the kind are common to every large city and their existence is well known in Montreal, Toronto, Winnipeg and Vancouver.

Here, another factor, although it did not make for the variations in the size of the decrease, ought to be mentioned for its part in keeping up the size of the urban household; this is the large households designated as quasi-family groups. The quasi-family groups have but little effect on the average size of the household for the country as a whole, yet, due to the fact that they gather their members from miles around, they are important in counteracting the factors which work to reduce the size of the urban household.

Average Size of Household in the Future.—As shown in preceding sections, the influence of the movement of population on the average size of the household in Canada has been considerable. Is it possible now, in the light of that study, to foresee to some extent what the fluctuations in the size of the household may be in the future?

There is every reason to expect smaller fluctuations with each decade because of the disappearance or the extenuation of the chief factors responsible for variations in the past. Immigration and emigration are not likely to occur again on such a large scale; mass settlement of the West or of thinly populated counties in the East is over; industrialization—and its natural corollary, the flow to the cities of the rural population—will undoubtedly be more gradual. In short, the movements of population will be on a much reduced scale and at the same time more uniform in the future than they have been in the past.

The average size of the Canadian household will, in all probability, go on decreasing, but the decrease should get smaller with each decade. The rural household may even increase in size as it did in 1931 for Quebec and New Brunswick. The new counties have now passed the initial stage of settlement and their normal development calls for an increase in the average size of household.

On the other hand, the urban household should be expected to register further decreases, although smaller ones than those recorded so far. Urbanization will likely go on, and modern city life undoubtedly thwarts the normal expansion of families and households. Bachelor life, made easier and more tempting every day, apartments and houses built for small families, high cost of living, uncertainty of employment, etc.—in fact, nearly every characteristic of modern city life one can think of—are definitely against the large family. The reasons in favour of a large family in the cities are purely moral reasons and not economic as might be the case in rural parts. For, while children may be considered an asset to a rural family where they will increase the production at a small cost and develop the patrimony, they become more and more of a liability to an urban family. The expression of Peguy "These great adventurers of the modern world" by which he designated the fathers of families, is indeed true of the heads of large families in a modern city.

CHAPTER IV

THE TYPICAL HOUSEHOLD IN MONTREAL, TORONTO AND WINNIPEG

Much use has been made by sociologists of the concept of a typical family. The needs of such a typical family, usually to consist of five persons, have been the basis of family food budgets, demands for minimum wages and even social legislation. It is, consequently, important that the best possible determination be made of the size of the typical family and that its significance be thoroughly understood. We should also know how the typical size varies with the age of the head of the family, from class to class, from race to race, and between rural and urban localities. All modern censuses and many of the earlier censuses compile the total population and the total number of families for the country as a whole and for each of the census districts. From these two figures it is possible by simple division to obtain a good, though not always an absolutely accurate, determination of the average size of the family. This average, the arithmetic mean, is very often the only figure available for determining the typical size of the family and for studying the variations in family size from decade to decade or between the different cross-sections of the population. Since the average would seldom be a digit, the size of the typical family is generally taken as the digit closest to the average, *i.e.*, if the average size of the family is 4·7, the typical family is considered to consist of 5 persons.

Distribution of Households According to Size.—The arithmetic mean is undoubtedly the most valuable of all statistics, but the fact that there are limitations to its applicability is not always fully realized. At the 1931 Canadian Census, frequency distributions of households according to size were compiled for the cities of Montreal, Toronto and Winnipeg. An analysis of these distributions should throw considerable light on the desirability of using the arithmetic mean to determine the typical size of the household and should reveal any tendency for households to be of a typical size.

XXVIII.—NUMERICAL AND PERCENTAGE DISTRIBUTION OF HOUSEHOLDS[1], BY SIZE, GIVING NUMBER OF PERSONS AND LODGERS, MONTREAL, TORONTO AND WINNIPEG, 1931

Persons per Household	Montreal			Toronto			Winnipeg		
	Households	Persons	Lodgers	Households	Persons	Lodgers	Households	Persons	Lodgers
NUMERICAL DISTRIBUTION									
Total	170,811	785,874	53,870	149,538	613,377	57,726	48,294	210,980	19,807
1	6,939	6,939	-	5,713	5,713	-	1,883	1,883	-
2	28,983	57,966	3,180	28,745	57,490	3,079	8,066	16,132	772
3	31,184	93,552	7,045	32,737	98,211	7,548	9,540	28,620	1,968
4	28,694	114,776	8,179	29,606	118,424	9,500	9,381	37,524	2,631
5	23,462	117,310	7,923	21,608	108,040	9,193	7,288	36,440	2,825
6	17,298	103,788	6,781	13,558	81,348	7,758	4,904	29,424	2,641
7	12,439	87,073	5,799	7,961	55,727	6,041	2,986	20,902	2,126
8	8,431	67,448	4,708	4,359	34,872	4,391	1,766	14,128	1,811
9	5,521	49,689	3,438	2,401	21,609	3,570	1,003	9,027	1,326
10	3,551	35,510	2,579	1,296	12,960	2,357	623	6,230	1,148
11	2,019	22,209	1,561	733	8,063	1,627	365	4,015	898
12 and over	2,282	29,614	2,677	821	10,920	2,662	489	6,655	1,661
PERCENTAGE DISTRIBUTION									
Total	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
1	4·06	0·88	-	3·82	0·93	-	3·90	0·89	-
2	16·97	7·38	5·90	19·22	9·37	5·33	16·70	7·65	3·90
3	18·25	11·90	13·08	21·89	16·01	13·08	19·76	13·56	9·94
4	16·80	14·60	15·18	19·80	19·31	16·46	19·42	17·79	13·28
5	13·74	14·93	14·71	14·45	17·61	15·93	15·09	17·27	14·26
6	10·13	13·21	12·59	9·07	13·26	13·44	10·15	13·95	13·34
7	7·28	11·08	10·76	5·32	9·09	10·46	6·18	9·91	10·73
8	4·94	8·58	8·74	2·91	5·69	7·61	3·66	6·70	9·14
9	3·23	6·32	6·38	1·61	3·52	6·18	2·08	4·28	6·69
10	2·08	4·52	4·79	0·87	2·11	4·08	1·29	2·95	5·80
11	1·18	2·83	2·90	0·49	1·32	2·82	0·76	1·90	4·53
12 and over	1·34	3·77	4·97	0·55	1·78	4·61	1·01	3·15	8·39

[1]Exclusive of hotels, institutions, rooming houses and other households (tents, camps, etc.).

From the above statement it will easily be seen that in each of the three cities the modal household, *i.e.*, the household of that size which occurs most frequently, is one consisting of 3 persons. We might then conclude that the typical family was one consisting of 3 persons. Confining attention for the moment to the Toronto percentages, it is obvious that 3-person households are not much more numerous than those containing 2 or 4 persons. Apparently the tendency is for the household to consist of from 2 to 4 rather than of 3 persons. Instead of saying, therefore, that the typical household is one of 3 persons, it is preferable to say that it consists of from 2 to 4 persons, a statement justified by the fact that 60·91 p.c. of the households, well over half, are of these sizes. Similarly, households of from 2 to 4 persons take in 55·87 p.c. of the Winnipeg and 52·03 p.c. of the Montreal households, the modal tendency being less marked in the two latter cities.

The Modal Tendency in Household Size.—Statement XXIX supports the contention that households tend to consist of 2 to 4 persons rather than 3 persons.

XXIX.—PERCENTAGE DISTRIBUTION OF HOUSEHOLDS, BY INCREASING SIZE INTERVALS ABOUT THE MODE, MONTREAL, TORONTO AND WINNIPEG, 1931

City	P.C. of All Households Consisting of Given Number of Persons									
	3	2-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	All Sizes
Montreal	18·26	52·03	69·83	79·96	87·24	92·18	95·41	97·49	98·67	100·00
Toronto	21·89	60·91	79·18	88·25	93·57	96·48	98·09	98·96	99·45	100·00
Winnipeg	19·75	55·87	74·86	85·01	91·19	94·85	96·93	98·22	98·98	100·00

The following example illustrates two types of modal tendencies. In literature dealing with housing, reference is often made to the typical house, say, of 6 rooms. It is of interest to see which cities have a typical household with respect to the number of rooms occupied.

XXX.—PERCENTAGE DISTRIBUTION OF HOUSEHOLDS ACCORDING TO NUMBER OF ROOMS OCCUPIED, MONTREAL, TORONTO AND WINNIPEG, 1931

City	P.C. of All Households Occupying Given Number of Rooms										
	Less than 3	3	4	5	6	7	8	9	10	11	12 or more
Montreal	4·50	7·52	19·59	22·95	20·17	14·32	6·55	2·10	1·02	0·31	0·97
Toronto	6·10	10·47	9·83	12·35	32·15	10·25	9·86	4·22	2·43	0·82	1·52
Winnipeg	10·69	12·71	13·83	20·30	18·43	10·81	5·91	3·22	2·13	0·80	1·18

Of all Toronto households 32·15 p.c. occupy 6 rooms. On the other hand, only 12·35 p.c. occupy 5 rooms and 10·25 p.c. occupy 7 rooms. The 6-room household is definitely the typical household in Toronto and a household occupying more rooms or fewer rooms might be considered a-typical. There is no such tendency for households to occupy 6 rooms in Montreal and Winnipeg although 62·71 p.c. of the Montreal households and 52·56 p.c. of the Winnipeg households occupy from 4 to 6 rooms.

We have observed two types of modal tendency, one for the Toronto household to occupy 6 rooms and the other for the Montreal and Winnipeg households to occupy from 4 to 6 rooms. The general modal tendency in the size of the household is of the latter variety. Thus, when we say that the typical household consists of a given number of persons, we do not mean that families of this size are to be found predominating everywhere and that a family of a different size is abnormal, but merely that it is the standard size from which variation may be measured.

Although the 3-person household is the most common in the three cities under observation, in no case does it contain the largest percentage of persons. It may be seen from Statement XXVIII that in Toronto and Winnipeg the 4-person household contains the largest percentage of the population and in Montreal the 5-person household. This fact complicates the determination of the typical size of the household since we must decide whether we are interested in the size of the households which occur most frequently or in the size of the households which contain the largest part of the population. The builder of an apartment house might be wise to construct a good many apartments which would best fit the requirements of a family of 3 persons since he would probably have more tenants with families of that size than of any other size. On the other hand, a food budget designed for a 4-person family would satisfy the needs of a larger percentage of the family population than one designed for a 3-person family.

XXXI.—SIZE OF HOUSEHOLD AS MEASURED BY DIFFERENT STATISTICS, MONTREAL, TORONTO AND WINNIPEG, 1931

Item	Montreal	Toronto	Winnipeg
Persons per household—			
In median household	4·14	3·76	4·00
In household containing median persons	5·52	4·75	5·09
Mean of medians	4·83	4·26	4·55
Average persons per household	4·60	4·10	4·37
Average persons per *normal* household	4·84	4·15	4·40
Modal size of household	3	3	3
Size of household containing largest percentage of the population	5	4	4

The median household is of such a size that one-half the households are larger in size and one-half smaller. The household containing the median person is of such a size that one-half the population belongs to smaller households and one-half belongs to larger households. There is a marked difference between the two medians for each of the cities. Evidently the typical person will come from a family which is larger than the typical family if we consider the typical family to be the family of that size which occurs most frequently. Though the very small families are very numerous they contain only a small percentage of the population. Households of 1 and 2 persons comprise 21·03 p.c. of the Montreal households and 23·04 p.c. of the Toronto households but they contribute only 8·26 p.c. and 10·30 p.c., respectively, of the household populations. The average persons per household lies between the two medians and when used as a basis for determining the typical size of the household may be regarded as a compromise between the two points of view as to whether the modal household or the household containing the modal number of persons should be taken as the typical. It will be seen from Statement XXXI that the average of persons per household comes close in every case to the mean of the two medians.

Comparison of Average Sizes of All Households and of Normal Households.—The normal household may be said to consist of one private family with husband and wife living together as heads. In Statement XXXI the average sizes of all ordinary households are compared with the average sizes of the normal households.

In each city, the average for normal households is larger than that for all households. Evidently the households with unmarried heads, most of which will be small, tend to lower the average more than those with two or more families raise it. That the difference in the average for Montreal, 0·24, is considerably greater than the differences for Toronto and Winnipeg, 0·05 and 0·03, respectively, reflects the fact that families living together in the same household are more frequent in the latter two cities. Average household size, therefore, does not fully indicate the high birth rate in Montreal as compared with that in Toronto and Winnipeg. This illustrates the point that fertility and the number of children in families are not the only factors which determine average household size. We must bear this in mind when interpreting fluctuations in average household size from decade to decade as given by previous censuses.

Effect on Average Size of Family of the Very Large Families.—For Toronto, the average persons per household, 4·10, is not far from 4, the size of the households containing the largest percentage of the population, while the average persons per household for Montreal, 4·60, is closest to the integer 5, which is again the size of the households with the greatest share of the population. However, the average sizes of households with not more than 6 persons in Montreal and Toronto are respectively, 3·62 and 3·56 persons per household. The difference of 0·50 persons per family between the average sizes of the Montreal and Toronto households is obviously due to the presence in Montreal of a higher proportion of extremely large families, although only 20·05 p.c. of all Montreal households have more than 6 persons. Chart IV, which compares the percentage distributions of households according to size for Montreal, Toronto and Winnipeg, clearly indicates that Montreal has a higher proportion of extremely large families than the other two cities. Evidently the average size of the family will be larger for a section of the population containing a number of extremely large families than for a section practically without abnormally large families even though the great majority of the families in the two sections may have the same size distribution. For example, it will be seen in Chapter XI that the difference between the average sizes of the rural and urban Canadian families can be largely accounted for by the higher frequency in the rural districts of unusually large families. Its sensitivity to very large families detracts considerably from the reliability of the arithmetic mean as a measure of family size. The geometric mean is less sensitive to them but its calculation is extremely laborious.

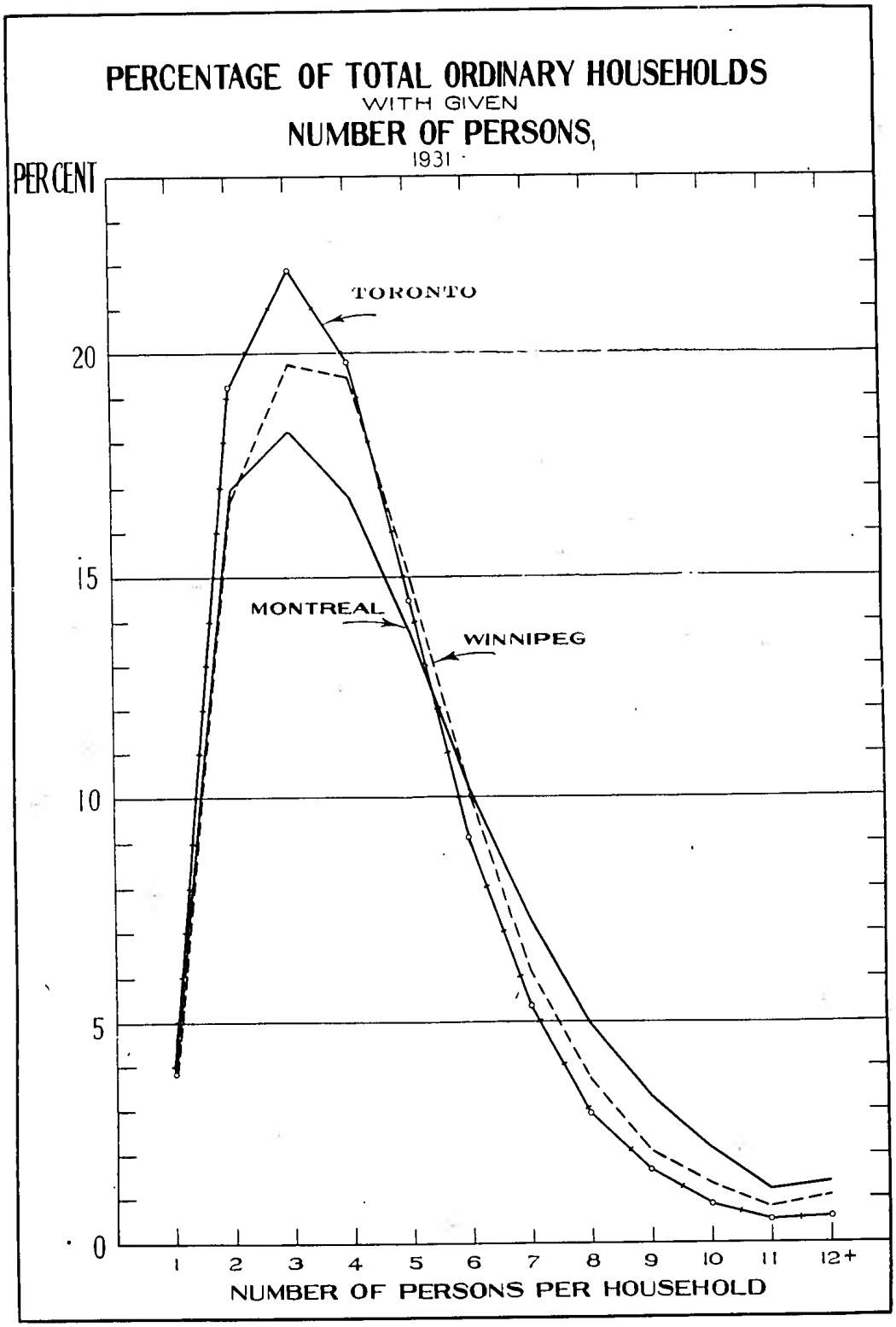
PERCENTAGE OF TOTAL ORDINARY HOUSEHOLDS
WITH GIVEN
NUMBER OF PERSONS,
1931
PER CENT
TORONTO
MONTREAL
WINNIPEG
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
12+
NUMBER OF PERSONS PER HOUSEHOLD

Chart 4

We must conclude that the average persons per family, despite its one serious defect, measures family size more satisfactorily than any other statistic. At the same time it must always be remembered that the family of typical size is a concept rather than an actuality. Taking the typical size of the household as the nearest digit to the average persons per household we see from Statement XXVIII, page 48, that 4-person households in Toronto include 19·80 p.c. of the households and 19·31 p.c. of the household population, 5-person households in Montreal, 13·74 p.c. of the households and 14·93 p.c. of the population and 4-person households in Winnipeg, 19·42 p.c. of the households and 17·79 p.c. of the population.

Gravitation of Households to Typical Size.—The households of the metropolitan centres, in particular, are extremely heterogeneous with respect to type of head, type of home and composition. The tendency which apparently exists for the major portion of them to be confined within a small size-interval is probably due to a combination of factors.

First, the population of Canadian cities is mostly of rural origin, having been drawn from either the long-settled farms of Eastern Canada or immigration. This population is preserving the privacy, intimacy and sociability of family life so that Canadian households are homes rather than sleeping quarters. Whether a succeeding generation, raised from infancy in an urban environment, will carry on this tradition must remain unanswered. The household tends to be of a size not too large to preclude privacy and not too small to be a social unit. Referring again to Statement XXVIII, page 48, it is interesting to note that the household containing the largest percentage of lodgers has 4 persons in Montreal, 4 persons in Toronto and 5 persons in Winnipeg. Moreover, of all lodgers living in ordinary households as distinguished from rooming houses, hotels and institutions, 55·56 p.c. in Montreal; 58·91 p.c. in Toronto, and 50·61 p.c. in Winnipeg live in households of from 3 to 6 persons. On the other hand, only 38·54 p.c. of the Montreal lodgers, 37·76 p.c. of the Toronto lodgers, and 45·28 p.c. of the Winnipeg lodgers live in households of more than 6 persons. The lodger evidently seeks out a home where he will be a member of a household of typical size and under-sized families take in a lodger to round out the size of the household.

Secondly, economic conditions may cause households to gravitate towards a constant size. For example, it is possible that 5-room and 6-room houses can be more economically rented and maintained than smaller or larger houses and households may tend to be of the size which can be best accommodated in houses of these sizes. The adjustment between persons per household and rooms per household will be studied later.

Thirdly, census families, though they do not correspond to biological families, are derived from them. Consequently, the sizes of census families will be determined partly by the sizes of the biological families and one would expect the latter to follow a skew-normal distribution. It is curious that social, economic and biological factors have complementary rather than opposite effects in determining the size distribution of households.

Family Size and Housing Accommodation.—We have already remarked that the sizes of available houses might have some weight in determining the numbers of persons to be found in the households occupying them. Do the sizes of the families in a community determine the sizes of the dwellings or do the sizes of the dwellings determine the sizes of the families? For the cities of Montreal, Toronto, and Winnipeg we have tables cross-classifying persons per household and rooms per household (see Tables 3-5, Part III, page 187). In Montreal the average number of rooms per person was 1·18, in Toronto 1·41 and in Winnipeg, 1·19.

Coefficients of correlation between persons per household and rooms per household for the three cities are given below:—

	r	r^2
Montreal	·27	·0729
Toronto	·38	·1444
Winnipeg	·48	·2304

The above correlations are amazingly low since the square of the coefficient of the correlation measures the proportion of the variance in the number of rooms per person associated with the variance in the number of persons per household. Thus only 7·3 p.c. of the variance in the number of rooms per household in Montreal is associated with the sizes of the families occupying them and the remaining 92·7 p.c. must be due to other factors. When a family is choosing

its home, it would seem that income, social status, etc., are vastly more important factors in determining its size than the number of persons in the family. Small families are occupying large houses while large families are crowded into a few rooms simply because they cannot afford sufficient room. This is no revelation but the universality with which it occurs may not be fully realized. An almost total lack of correlation between size of family and number of rooms occupied for Montreal and Toronto, and a poor correlation for Winnipeg, reveal the true cause of our housing shortage. It is not so much that there is insufficient accommodation as that the available accommodation is not distributed according to the needs of the families. This treatise deals only with the quantitative aspect of the housing problem, of course, no allowance being made for the fact that many of the rooms reported may be very small, in poor condition or lacking in what are now considered essential conveniences.

If the correlations between persons per household and rooms per household were perfect there would be no housing problem, at least in so far as space is concerned, since, even in Montreal, there would be 1·18 rooms for each person. On the other hand, to bring the rooms *per capita* for Montreal (1·18) up to that for Toronto (1·41) would necessitate the provision of approximately 180,000 additional rooms, an increase in the present total, 927,248*, of 19 p.c. And unless care were taken that the benefits of this very large addition to the housing accommodation in Montreal went to those in most need of it, there would still be at least as much overcrowding as at present exists in Toronto. The construction of new houses is clearly not the one and only solution for our housing shortage. Of course, to attain a perfect correlation between persons per household and rooms per household would be even mathematically, let alone practically, impossible but there is an amazing lack of adjustment between size of family and number of rooms occupied as measured by their correlation. This may be due to many causes and it is beyond the scope of this monograph to isolate them. The well-to-do will always have much better accommodation than the poor. The rapid and chaotic growth of our cities causes overcrowding in some parts and perhaps an oversupply of space in other parts. Nevertheless, the fact needs to be stressed that an entirely quantitative analysis indicates that the housing problem is much more a question of distribution than of underproduction.

Overcrowding in Large Households.—A more detailed study has been made of the frequency distribution cross-classifying persons per household and rooms per household for Toronto.

XXXII.—MEAN, DISPERSIONS AND SKEW FOR PERSONS PER ORDINARY HOUSEHOLD, BY NUMBER OF ROOMS OCCUPIED, TORONTO, 1931

Rooms per Household	Mean Persons per Household	Standard Deviation in Persons per Household	Coefficient of Dispersion	Skew
1	1·82	0·95	0·52	1·40
2	2·58	1·21	0·47	1·41
3	2·93	1·34	0·46	1·36
4	3·44	1·60	0·47	1·16
5	3·80	1·73	0·45	1·04
6	4·39	1·88	0·43	0·95
7	4·56	2·03	0·44	1·00
8	4·88	2·21	0·45	0·88
9	5·05	2·37	0·47	1·10
10	5·38	2·66	0·49	1·18
11	5·74	4·01	0·70	0·84
12	5·88	3·11	0·53	1·26

In the comparison of the average sizes of households occupying different numbers of rooms, the average size of the family increases, as would be expected, with the number of rooms occupied. What is significant, however, is the wide dispersion in the sizes of households occupying the same number of rooms. It is this dispersion which destroys the correlation between persons per household and rooms per household. In each case there is a large positive skew, the interpretation being that large families are occupying dwellings of every size, large and small. Many of them are confined to the space they can afford irrespective of their needs.

*Exclusive of a small number of rooms in households where the number of rooms was not stated.

XXXIII.—SUMMARY DATA FOR HOUSEHOLDS OF EACH SIZE, TORONTO, 1931

Persons per Household	P.C. of Households of Given Size	Rooms per Person	Families per Household	P.C. Overcrowded	P.C. with at Least One Room per Person	Percentage Distributions According to Size	
						Overcrowded Households	Families with Two Heads and Children Living at Home
Total	100·00	1·4	1·09	15·48	84·52	100·00	100·00
1	3·82	3·8	1·00	–	–	–	–
2	19·22	2·4	1·00	2·50	97·50	3·10	28·78
3	21·89	1·8	1·02	6 75	93·25	9·54	26·21
4	19·80	1·5	1·06	10·78	89·22	13·80	20·63
5	14·45	1·3	1·12	13·69	86·31	12·78	12·00
6	9·07	1·1	1·19	19·94	80·06	11·68	6·31
7	5·32	1·0	1·25	54·10	45·90	18·61	3·16
8	2·91	0·9	1·32	63·59	36·41	11·98	1·55
9	1·61	0·8	1·37	76·68	23·32	7·96	0·76
10	0·87	0·8	1·52	81·71	18·29	4·58	0·37
11	0·49	0·7	1·65	87·72	12·28	2·78	0·15
12 and over	0·55	0·7	2·28	89·89	10·11	3·19	0·08

Pertinent information relating to living conditions in households of different sizes is summarized in Statement XXXIII. It is the extremely large households which generally suffer from lack of adequate space. In most studies of housing undertaken on this continent, overcrowded households have been defined as those with accommodation of less than 1 room per person. On the basis of this arbitrary definition 15·48 p.c. of Toronto households are overerowded. Only 10·78 p.c. of the Toronto households of typical size, which we have already established to consist of 4 persons, are overerowded compared with 89·89 p.e. of those with 12 or more persons. Of all overerowded households, 13·80 p.c. eonsist of 4 persons and 18·61 p.e. consist of 7 persons. The typieal size of the overcrowded houschold is 7 rather than 4. Seven-person households ineludc 20·34 p.c. of the population with accommodation of less than 1 room per person.

Overcrowding then applies mostly to the oversizcd families. If these oversized families were largely private families consisting of husband and wife and their children, thc situation would be less serious since small children do not require the same amount of spaee as adults. Moreover, there is not the same nccessity for privacy between members of such a family as there is when the household consists of several adult members not of kin. From comparison of the perecntage distributions according to size of all households and of private families consisting of husband and wife and their children it is obvious that large families of the latter class account for only a small fraction of the large households. The extremely large households must be made up of the immediate families of the heads, possibly guardianship children and other dependents, lodgers and lodging families. It is through economic necessity that these people, sometimes of kin, sometimes not, are driven together to seek shelter in overcrowded and poorly equipped dwellings and it is this section of the population which is inadequately housed.

In addition it is evident that the man with a large family is generally unable to afford a dwelling large enough to house it comfortably. This will encourage him to limit the size of his family and is one explanation of the low and falling birth rate in large eities. Obviously the construction of small new houses would do little to improve the situation.

Table 6, Part II, page 188, classifies households aecording to the number of rooms per person and gives the population of the households. Households and their populations are divided into deciles in Statement XXXIV according to the number of rooms per person.

XXXIV.—PARTITION OF HOUSEHOLDS AND HOUSEHOLD POPULATION ACCORDING TO ROOMS PER PERSON, TORONTO, 1931

Decile	Rooms per Person		Decile	Rooms per Person	
	Households	Population of Households		Households	Population of Households
1st	0·75	0·70	6th	1·60	1·40
2nd	1·00	0·86	7th	2·00	1·50
3rd	1·11	1·00	8th	2·01	1·90
4th	1·25	1·13	9th	3·00	2·33
5th	1·50	1·20			

Since the fifth decile corresponds to the median it may be seen that approximately one-half the households have less than 1·5 rooms per person, while one-half the population lives in households with less than 1·20 rooms per person which is considerably below the average rooms per person, 1·41. It is evident in this case that too much reliance cannot be placed on the significance of the average in statistical surveys. We found the average person per household a valuable tool in determining the typical size of households but average rooms per person has little meaning when we are dealing with housing. Only 5·98 p.c. of the households, including 6·57 p.c. of the population, have 1·3 or more and under 1·5 rooms per person. Reference to Table 6 will disclose there is no central tendency in the number of rooms per person. For Toronto households, 1·41 rooms per person would, on the surface, indicate that Torontonians were very comfortably and efficiently housed. Unfortunately, further analysis has revealed that very few households have average accommodation, the majority having either more than they need or less than they need. Average rooms per person therefore fails to measure the adequacy of housing accommodation in a locality.

Housing accommodation is a complicated matter which must be dealt with from many angles, qualitative as well as quantitative.* We have shown that there is very little relation between size of household and size of house. Their low correlation has been attributed to the wide dispersion in the sizes of households occupying the same number of rooms. In particular, the larger households are occupying varying numbers of rooms irrespective of their needs.

*A comprehensive study of housing conditions throughout Canada appears in the 1931 Census Monograph entitled *Housing in Canada* by H. F. Greenway.

CHAPTER V

LODGERS

Of the 10,362,833 total population for the nine provinces according to the Census of 1931, 555,606 or 5·36 p.c. were classed as lodgers. Of these, 59,513 or 10·71 p.c. lodged in hotels, rooming houses, camps and institutions and 89·29 p.c. in ordinary households. The low percentage of lodgers in the total population illustrates the preference Canadians have for family life. Evidently they are only lodgers by necessity and, in that event, they prefer lodging in ordinary households to lodging in hotels or institutions.

PART A—THE DISTRIBUTION AND COMPOSITION OF THE LODGING POPULATION

In discussing lodging population there are two groups to be considered—those who lodge and those who take in lodgers. The first section of this chapter will deal with the former group comprising 53·9 p.c. of the 1,030,591 Canadians who do not belong to private families.

XXXV.—PERCENTAGE OF POPULATION LODGERS, AND DISTRIBUTION OF LODGERS BY NUMBER PER HOUSEHOLD, RURAL AND URBAN, CANADA, 1931

Item	P.C. of Population Lodgers	P.C. of Total Lodgers in										Median Lodgers per Household[1]
		Ordinary Households with Given Number of Lodgers								Rooming Houses	Hotels, Camps, Institutions, etc.	
		1	2	3	4	5	6	7	8			
CANADA	5·36	44·5	19·4	9·5	5·7	3·8	2·8	2·0	1·6	7·2	3·5	1·69
Rural	3·02	61·9	18·2	6·7	3·3	1·9	1·3	0·8	0·6	3·1	2·2	1·29
Urban	7·37	38·4	19·8	10·5	6·5	4·5	3·4	2·4	1·9	8·7	3·9	1·99

[1]For households with lodgers only.

In the above statement, lodgers are distributed according to the type of household in which they live. The distinction made in the census between ordinary households and rooming houses is a purely arbitrary one—the rooming house being a household where there were more than 8 lodgers at the time of the census. It is clear that the latter cannot be regarded as a family unit in the same sense as a household with only 1 or 2 lodgers. The degree to which the rooming house fulfils the functions of a home and the extent to which the lodger may enjoy home privileges is inversely related to the number of lodgers. Now the type of household in which the lodger chooses to stay is indicative of his tastes and background. In Canada, it would appear that the majority of lodgers prefer lodging in households where there are few lodgers, since 44·5 p.c. of all lodgers live in 1-lodger households and 63·9 p.c. in households where there are not more than 2 lodgers. This would indicate that the typical Canadian lodger has a keen instinct for home life since, being unable to live with his family or having no family, he seeks lodging in a household where he may enjoy home privileges to the greatest possible extent. In the rural districts 61·9 p.c. of the lodgers live in households where they are the sole lodgers. This, however, merely reflects the fact that many of the rural lodgers may be found in communities where there are no other lodgers and, consequently, *must* lodge by themselves. It is more significant, therefore, that 38 p.c. of the *urban* lodgers live in 1-lodger households and 58 p.c. live in households where there are not more than 2 lodgers. The percentage of lodgers living in rooming houses, hotels, camps, institutions, etc., is quite small, even for the urban population. The last column of Statement XXXV gives the median lodgers per household with lodgers. In calculating the median it was necessary to omit hotels, camps, institutions, etc., since their distribution according to the number of lodgers is not available. The median provides an index by which the tendency for lodgers to seek accommodation in private houses can be measured.

Rural and Urban Distribution by Provinces.—From Statement XXXVI it may be observed that the percentage of lodgers in the rural population is uniformly low for all provinces except British Columbia where there is a large non-farm element. The low percentage of the population lodgers, together with the low median lodgers per family, for rural Quebec where the population is 89·1 p.c. of French racial origin, establishes the French as the most home-loving of

Canadians. Inclusion in the rural population of Eastern Canada of a large number of unincorporated villages where lodgers are numerous tends to increase the percentages of lodgers in the rural populations of the Eastern Provinces. This adds even more significance to the lowness of the Quebec figure.

XXXVI.—PERCENTAGE OF RURAL POPULATION LODGERS, AND DISTRIBUTION OF RURAL LODGERS BY NUMBER PER HOUSEHOLD, CANADA, BY PROVINCES, 1931

Province	P.C. of Rural Population Lodgers	P.C. of Total Lodgers in										Median Lodgers per Rural Household[1]
		Ordinary Rural Households with Given Number of Lodgers								Rooming Houses	Hotels, Camps, Institutions, etc.	
		1	2	3	4	5	6	7	8			
Prince Edward Island	3·42	61·2	15·9	4·0	2·1	1·5	1·3	0·9	0·7	11·8	0·6	1·31
Nova Scotia	3·46	65·9	19·2	6·0	2·8	1·0	1·0	0·6	0·5	2·1	0·9	1·25
New Brunswick	3·10	64·2	19·5	7·0	3·0	1·3	0·6	0·4	0·1	2·2	1·7	1·27
Quebec	2·05	67·8	17·4	5·6	2·1	1·1	0·9	0·6	0·5	1·5	2·5	1·22
Ontario	3·69	60·1	18·3	7·0	3·3	2·3	1·5	0·9	0·8	4·1	1·7	1·32
Manitoba	2·68	64·9	18·8	6·3	3·0	2·3	0·8	0·2	0·6	0·8	2·3	1·25
Saskatchewan	2·04	74·5	15·6	4·5	2·5	0·5	0·8	0·3	[2]	0·8	0·5	1·17
Alberta	2·98	61·2	18·9	7·4	3·6	1·7	1·8	1·0	0·7	1·9	1·8	1·30
British Columbia	5·52	45·0	18·6	9·1	6·1	4·0	2·3	1·5	1·4	6·0	6·0	1·61

[1]For households with lodgers only.
[2]Less than one-tenth of one per cent.

Both the percentage of lodgers in the population and the median lodgers per household with lodgers are higher for the urban than the rural population of each province. Urban Quebec, despite the fact that it contains the large city of Montreal, has the lowest percentage of the population lodgers for any province, exhibiting again the French Canadian's preference for family life. The extremely high percentage lodgers for urban British Columbia is largely due to the cities of Vancouver and Victoria which will be dealt with later.

XXXVII.—PERCENTAGE OF URBAN POPULATION LODGERS, AND DISTRIBUTION OF URBAN LODGERS BY NUMBER PER HOUSEHOLD, CANADA, BY PROVINCES, 1931

Province	P.C. of Urban Population Lodgers	P.C. of Total Lodgers in										Median Lodgers per Urban Household[1]
		Ordinary Urban Households with Given Number of Lodgers								Rooming Houses	Hotels, Camps, Institutions, etc.	
		1	2	3	4	5	6	7	8			
Prince Edward Island	8·26	37·1	19·8	11·9	7·1	4·5	3·6	2·5	1·9	3·8	7·8	1·95
Nova Scotia	5·94	42·9	23·1	10·4	6·3	4·0	2·6	1·9	1·4	4·1	3·3	1·74
New Brunswick	6·78	42·3	20·9	9·7	5·4	3·9	3·3	1·8	1·1	6·8	4·8	1·75
Quebec	5·78	39·8	20·2	10·7	6·7	4·5	3·4	2·4	1·8	7·8	2·7	1·94
Ontario	7·86	41·5	21·9	11·1	6·5	4·3	3·3	2·3	1·7	5·0	2·4	1·83
Manitoba	9·01	32·2	18·1	11·3	7·7	6·1	4·6	3·5	2·9	10·0	3·6	2·38
Saskatchewan	7·53	38·5	20·7	11·5	6·8	4·7	3·2	2·2	1·2	3·8	7·4	1·88
Alberta	8·00	36·5	17·3	10·2	6·3	4·1	3·5	2·7	2·6	11·7	5·1	2·13
British Columbia	11·25	25·8	12·1	7·2	5·3	4·3	2·9	2·7	2·6	26·0	11·1	3·41

[1]For households with lodgers only.

The percentage of lodgers in households where there is only one lodger is considerably lower for the urban than for the rural population of each province. The extremely high percentage for the rural population was, therefore, due partly to the fact that lodgers were few and far between and necessarily lodged separately. The percentage of lodgers in rooming houses is higher for the urban population than for the rural population in every province except Prince Edward Island reflecting the impracticability of rooming houses in rural districts.

Lodgers in Cities of 30,000 and over.—Statement XXXIX describes the lodging population in cities of population 30,000 and over which have been ranked according to the lowness of the median lodgers per household with lodgers. It has already been pointed out that the median lodgers per household provides an index for measuring the tendency for lodgers to seek home life. It may be said that the lodging population in cities where the median is small has a keener family instinct than in cities where the median is large. In this respect, as shown in Statement XLI, the cities of Eastern Canada all rank above those of Western Canada while, when eastern and western cities are taken separately, the small cities rank above the large cities. An exception is the city of Victoria with a population of 39,082 which ranks second to the last. A very high percentage of lodgers in rooming houses, hotels, camps, institutions, etc., will be noted in Vancouver and Victoria. This results from the custom of large numbers of single males of Asiatic origin to live under the same roof.

XXXVIII.—MEDIAN LODGERS PER HOUSEHOLD WITH LODGERS, AND PERCENTAGE DISTRIBUTION OF LODGERS BY NUMBER PER HOUSEHOLD, CITIES OF 30,000 AND OVER, 1931

City	Median Lodgers per House-hold[1]	P.C. of Total Lodgers in									
		Ordinary Households with Given Number of Lodgers								Room-ing Houses	Hotels, Camps, Institu-tions, etc.
		1	2	3	4	5	6	7	8		
Verdun	1·27	64·8	22·8	6·4	2·6	1·7	1·0	-	-	0·4	0·3
Brantford	1·48	50·5	23·5	12·8	5·0	1·3	2·5	1·5	0·4	1·4	1·1
Trois-Rivières	1·51	47·4	23·7	8·1	4·2	4·1	1·4	1·1	2·4	3·1	4·2
Windsor	1·75	43·4	24·5	13·5	5·8	3·8	3·1	0·8	1·4	2·8	0·9
London	1·75	44·4	22·0	10·6	6·9	4·8	4·4	1·4	1·0	4·1	0·4
Ottawa	1·77	43·0	22·1	11·7	6·5	5·0	3·1	2·5	1·3	2·9	1·9
Kitchener	1·77	42·3	25·3	13·5	5·1	1·7	3·1	1·5	1·7	4·1	1·7
Saint John	1·80	42·0	19·9	7·9	5·6	4·5	3·6	2·9	1·7	7·7	4·2
Hamilton	1·83	42·1	23·2	11·4	7·6	4·8	2·9	2·6	2·4	2·7	0·3
Halifax	1·95	37·2	23·2	9·9	7·1	4·9	2·8	2·0	1·2	7·2	4·5
Quebec	1·97	38·0	20·6	10·5	6·3	4·4	3·7	2·4	1·8	7·7	4·6
Toronto	2·14	35·6	21·5	11·8	7·5	5·6	4·5	3·2	2·4	6·5	1·4
Montreal	2·23	35·1	19·9	11·7	7·8	5·2	4·2	3·3	2·1	9·7	0·8
Regina	2·36	30·8	20·7	13·0	8·7	7·4	4·1	3·5	1·9	7·3	2·6
Saskatoon	2·39	31·1	19·1	11·8	7·9	5·5	4·5	3·8	2·2	10·4	3·7
Calgary	2·45	32·7	16·6	10·1	7·1	5·0	4·5	3·8	3·4	13·9	2·9
Edmonton	2·46	33·0	15·4	8·8	5·1	3·7	3·5	2·5	3·3	20·2	4·5
Winnipeg	2·65	29·3	17·5	11·5	8·4	6·6	5·3	3·9	3·3	11·3	2·9
Victoria	2·98	30·0	14·1	6·9	6·4	6·7	3·3	3·0	3·8	20·6	5·2
Vancouver	4·12	23·9	11·1	6·6	4·7	3·9	2·9	2·8	2·3	30·8	11·0

[1]For households with lodgers only.

XXXIX.—MEDIAN LODGERS PER HOUSEHOLD, AND RELEVANT POPULATION ATTRIBUTES, CITIES OF 30,000 AND OVER, 1931

City	(1) Median Lodgers per House-hold	(2) P.C. of Popu-lation Lodgers	(3) P.C. of Popu-tion Born outside Province	(4) P.C. of Males of Foreign[1] Origin	(5) P.C. Increase in Popu-lation, 1921-31[2]
Verdun	1·27	4·0	36·78	2·87	58·84
Brantford	1·48	6·3	31·53	12·35	2·22
Trois-Rivières	1·51	3·7	5·95	0·94	36·91
Windsor	1·75	7·9	39·66	18·68	38·85
London	1·75	7·5	28·36	5·67	14·32
Ottawa	1·77	7·4	32·07	6·69	15·00
Kitchener	1·77	7·6	23·35	13·68	29·32
Saint John	1·80	7·1	17·56	4·64	0·73
Hamilton	1·83	7·9	41·65	16·18	26·61
Halifax	1·95	7·8	19·06	4·43	1·53
Quebec	1·97	5·4	3·85	1·26	27·11
Toronto	2·14	9·9	41·02	16·18	17·32
Montreal	2·23	7·4	22·38	14·74	24·44
Regina	2·36	9·7	59·72	15·25	35·29
Saskatoon	2·39	10·2	63·62	13·86	40·54
Calgary	2·45	9·6	68·21	11·72	24·42
Edmonton	2·46	8·3	64·43	15·11	25·73
Winnipeg	2·65	10·5	57·71	27·34	18·14
Victoria	2·98	9·6	65·91	19·09	0·91
Vancouver	4·12	12·3	71·33	18·55	33·81

[1]"Foreign" here includes only those of other than British, French, Scandinavian, Dutch, Finnish and German racial origin.

[2]Based on 1931 population.

Statement XXXIX gives data for each city concerning attributes of the population which are instrumental in determining the extent and distribution of its lodging population. The percentage born outside the province provides a measure of the floating population of a city. The correlation of ·58 between the median lodgers per household and the percentage of the total population lodgers indicates that the more lodgers there are in a city the more likely they are to be found together. Since detailed information on the lodging population is available for only the cities of 30,000 and over listed above, one is limited to twenty items in working out correlations and their probable error is considerable. Nevertheless the following simple correlations obtained from the data of Statement XXXIX may be considered significant.

r_{12} = ·58—the correlation between median lodgers per household and the percentage of lodgers in the population.

r_{13} = ·70—the correlation between median lodgers per household and the percentage of the population born outside the province.

r_{14} = ·58—the eorrclation between median lodgers per household and the pereentage of the male population of foreign racial origin.*

r_{23} = ·69—the eorrelation bctween perccntagc of thc population lodgers and thc percentage of the population born outside thc provinee.

r_{24} = ·68—the eorrclation between thc pcrcentage of thc population lodgers and the pereentage of the male population of foreign racial origin.*

Both the pcrecntage of lodgcrs in the population and the extcnt to which they erowd together in rooming houses is due largely to the presenee of floating and foreign elcments. The latter, then, arc the most likely lodgcrs and show the least tendency to seek lodging houses where they will enjoy thc maximum benefits of family life. That the correlation bctween median lodgers per household and the pereentage of the population lodgers is largely attributable to this faet is indicatcd by thc much lowcr partial correlation $r_{12 \cdot 45}$ = ·11 whcn the floating and foreign elemcnts arc held constant. That in communities where therc are many lodgers it is morc difficult for the individual lodger to find accommodation in a private household, and rooming houses are more likely to be availablc also contribute to thc corrclation. In summary, the typieal Canadian is seldom a lodger and when hc is onc, hc seeks aeeommodation in a private houschold wherc he may be onc of the family.

Verdun's ranking as Canada's premier city of families is surprising when one considers that thc rclativc growth of its population for the period 1921-31 exceeded that for any other Canadian eity and that a large proportion of the influx came from outside the province. Sincc Brantford and Windsor, which have also grown rapidly, follow closely after Verdun, it is evident that a rapidly inereasing population may still be a population of families if it is settling pcrmancntly. Vcrdun and Trois-Rivières havc eaeh a very small population of forcign* racial origin.

Comparison of the Canadian and United States Lodging Populations.—Do Canadian lodgers, by their tendeney to lodge in households where there are only 1 or 2 lodgers, exhibit a keener appreeiation of the private home than do those in the United States? The data included in Statcmcnt XL have been obtaincd from the Fifteenth Ccnsus of thc Unitcd States, taken in 1930. Sinee the number of lodgers living in rooming houses, hotels and institutions is not available, our comparison must bc eonfined to thc lodgers in households with from 1 to 8 lodgcrs.

XL.—NUMBER OF LODGERS LIVING IN ORDINARY HOUSEHOLDS HAVING 1-8 LODGERS, UNITED STATES, 1930

Lodgers per Household	Total Number of Lodgers		Lodgers per Household	Total Number of Lodgers	
	All Heads	Heads, Native White of Native Parentage		All Heads	Heads, Native White of Native Parentage
All families	4,800,292	2,185,257	Rural-Con.		
1	1,930,080	932,542	5	47,820	24,930
2	1,125,032	501,922	6	32,016	16,278
3	637,605	275,232	7	22,036	11,081
4	405,036	172,896	8	15,584	7,936
5	264,295	113,950			
6	189,480	81,216	Farm	665,169	374,906
7	139,804	60,851	1	435,620	253,997
8	108,960	46,648	2	123,818	68,142
			3	47,913	25,236
Urban	3,449,777	1,428,987	4	24,564	11,932
1	1,199,320	508,913	5	14,285	7,145
2	838,064	343,448	6	8,970	4,050
3	501,246	202,374	7	6,055	2,716
4	326,064	131,812	8	3,944	1,688
5	216,475	89,020			
6	157,464	64,938	Non-farm	685,346	381,364
7	117,768	49,770	1	295,140	169,632
8	93,376	38,712	2	163,150	90,332
			3	88,446	47,622
Rural	1,350,515	756,270	4	54,408	29,152
1	730,760	423,629	5	33,535	17,785
2	286,968	158,474	6	23,046	12,228
3	136,359	72,858	7	15,981	8,365
4	78,972	41,084	8	11,640	6,248

*See footnote 1 to Statement XXXIX.

XLI.—PERCENTAGE DISTRIBUTION OF LODGERS LIVING IN ORDINARY HOUSEHOLDS HAVING 1-8 LODGERS, CANADA, 1931, AND UNITED STATES, 1930

Lodgers per Household	P.C. of All Lodgers Living in Ordinary Households with Given Number of Lodgers		Lodgers per Household	P.C. of All Lodgers Living in Ordinary Households with Given Number of Lodgers	
	Canada, 1931	United States, 1930		Canada, 1931	United States, 1930
All families	100·0	100·0	Rural-Con.		
1	49·9	40·2	5	2·0	3·5
2	21·7	23·4	6	1·4	2·4
3	10·6	13·3	7	0·8	1·6
4	6·4	8·4	8	0·6	1·2
5	4·3	5·5			
6	3·1	4·0	Farm	[1]	100·0
7	2·2	2·9	1	–	65·4
8	1·8	2·3	2	–	18·6
			3	–	7·2
Urban	100·0	100·0	4	–	3·7
1	44·0	34·7	5	–	2·2
2	22·7	24·3	6	–	1·4
3	12·0	14·5	7	–	0·9
4	7·4	9·5	8	–	0·6
5	5·1	6·3			
6	3·9	4·6	Non-farm	[1]	100·0
7	2·7	3·4	1	–	43·1
8	2·2	2·7	2	–	23·8
			3	–	12·9
Rural	100·0	100·0	4	–	7·9
1	65·4	54·0	5	–	4·9
2	19·2	21·3	6	–	3·4
3	7·1	10·1	7	–	2·3
4	3·5	5·9	8	–	1·7

[1]Figures not available.

XLII.—MEDIAN LODGERS PER HOUSEHOLD HAVING 1-8 LODGERS, CANADA, 1931, AND UNITED STATES, 1930

Item	Median Lodgers per Household with 1-8 Lodgers				
	All Families	Urban	Rural		
			Farm	Non-Farm	Total
Canada, 1931	1·55	1·76	[1]	[1]	1·26
United States, 1930	1·92	2·13	1·26	1·79	1·42
United States, families with heads, native White and of native parentage	1·82	2·10	1·24	1·73	1·39

[1]Figures not available.

The statistics given in Statements XL and XLI for Canadian and United States lodgers are not strictly comparable since, in the United States reports, farm labourers living with the farm family, foster children or wards, and guests of the family with no usual abode were classed as lodgers in addition to those directly returned as lodgers or boarders. In the family compilation of the Canadian Census, farm labourers were included with the domestics, foster children and permanent guests with the dependents. This would tend to increase the number of lodgers in the United States but comparison is not with the number of lodgers but with the distribution of lodgers. If the United States system of classification were followed, the number of families with 1 lodger and, consequently, the number of lodgers in families with 1 lodger would be greatly augmented by the inclusion of families sheltering a dependent relative or having a single farm hand living with them. At the same time, some of the families which would be 1-lodger families according to the Canadian classification would become 2-lodgers families due to a dependent or farm hand being counted as an additional lodger. Consequently, differences due to method of classification would be partially compensating but it seems most likely that the United States method increases the proportion of lodgers in families with 1 or 2 lodgers and decreases the proportion in families with 6, 7 or 8 lodgers. This has a considerable bearing on the significance of differences in the percentage distributions of lodgers in Canada and in the United States. Despite the classification system, the percentage of lodgers living in 1-lodger households is considerably higher in Canada than in the United States. That the difference is not due to the Negro population of the United States, for example, is evident from a comparison of the medians for lodgers per household given in Statement XLII. Even lodgers living in the homes of the native

White section of the United States population show a greater boarding-house tendency than do all Canadian lodgers which is very significant in view of the fact that the latter contain a transient foreign element. This is true of both the rural and urban sections of the populations of the two countries. It must be mentioned by way of qualification that the rural and urban break-ups of the Canadian and United States populations are not made on the same basis since, in Canada, all incorporated villages are classed as urban and, in United States, only places with population in excess of 2,500.

The evidence is strong that the typical Canadian lodger is more desirous of belonging to a "family circle" than his United States neighbour. Since this tendency is true for the urban population as well as the rural it cannot be attributed wholly to the scattering of the population. The behaviour of Canada's lodging population would seem to indicate that the Canadian family is a closely knit unit.

PART B—CHARACTERISTICS OF THE ORDINARY HOUSEHOLD WITH LODGERS

Statistics relating to the households in which lodgers live will now be reviewed.

XLIII.—PERCENTAGES OF HOUSEHOLDS TAKING IN LODGERS AND PERCENTAGES OF THOSE TAKING IN LODGERS WITH MORE THAN ONE, BY TENURE, RURAL AND URBAN, CANADA, 1931

Item	Percentage of Households with Lodgers			
	Living in Home		Having More than One Living in Home	
	Owned	Rented	Owned	Rented
CANADA	13·30	17·40	21·65	32·04
Rural	10·36	12·03	14·88	24·94
Urban	17·46	19·11	27·33	33·46

Both rural and urban tenants take in lodgers more frequently than do home owners. The following correlation analysis determines the conditions under which lodgers are most likely to be found in normal households of tenants. Data relating to number of lodgers, monthly rent, number of children, housing accommodation and family earnings were available for urban households of one family with married male wage-earner heads living in rented homes. These families are relatively homogeneous for the following reasons: (1) they are all urban; (2) the wage-earning class excludes the very poor and the very rich; (3) only normal families with husband and wife living together as heads are included; (4) there is a tendency for families with heads at extreme ages to be excluded.

Table 7, Part II, page 189, gives averages compiled from data available for these families. Rent per room was obtained by taking the mid-points of each rental class as the average rent for the class. The end groups including families who paid less than $10 and more than $60 per month for rent were eliminated to overcome the difficulty of obtaining a mid-point which would involve laborious graduation, and to eliminate heterogeneous families which might be expected in the very low and very high rental groups. The column for persons per room excludes lodgers since it was considered desirable to determine the accommodation as it would exist without the lodger in accounting for its effect on his presence. In addition, the number of lodgers in the family and their earnings were excluded in obtaining average earnings per person.

It is obvious that wage-earners with given earnings may be very well off in a small town where the cost of living is low while an equal income would be insufficient to maintain their families on an equivalent scale in a large city. Similarly, a rent which is fairly high for one locality may be low for another locality. Consideration was given to the desirability of estimating an index for each locality which would eliminate effects due to differential costs of living. It might be well to point out that cost of living is referred to, not as a budget required to maintain a family according to a fixed standard, but rather as a measure of how far the dollar will go in each locality. Several indices were considered but it was impossible to obtain a satisfactory index for all the urban divisions included in the table. Moreover, standardizing would remove factors which might have an important influence on the composition of the family and these would be lost to the study. However, in interpreting correlations derived from the data of this table one must remember that the significance of rents per room and earnings per person is affected by the fact that they may not always have identical meanings for the different localities.

XLIV.—COMPARISON OF HOUSEHOLDS STUDIED WITH ALL ORDINARY HOUSEHOLDS, URBAN CANADA, 1931

Item	All Ordinary Households	Group Studied
Average size of family	4·5	4·51
Average number of lodgers	0·22	0·22
Average number of children	2·2	2·2
Persons per room, exclusive of lodgers	0·75	0·82

There were 379,780 households, 16·9 p.c. of all ordinary households, comprising 1,715,599 persons, or 17·1 p.c. of all persons in ordinary households included in the study. These households contained 85,221 lodgers, 17·2 p.c. of all those in ordinary households. They are by no means a sample but a select group chosen for their relative homogeneity, the fact that they are a typical group and the data which is available for them. Statement XLVI compares certain averages for the group studied with the averages for all ordinary households in urban Canada. It is obvious that the averages for the group studied depart little from those obtained for all ordinary households. The higher average for persons per room, exclusive of lodgers reflects the fact that the group studied contains no 1-person households and that it is a purely urban group.

Correlations.—All correlations were obtained without weighting but the groups were of relatively uniform size since the very small groups of less than ten persons and the small end groups whose importance might be over-emphasized in an unweighted correlation were omitted. Linear regression was assumed in calculating all coefficients of correlation and tests using the correlation ratio established the error resulting as small. In each case 142 sets of averages were correlated. A summary of all correlations used in the study is given below and the importance of each significant correlation will now be analysed in detail.

XLV.—SUMMARY OF CORRELATIONS BETWEEN HOUSEHOLD ATTRIBUTES

Variables	X_1 Lodgers per Household	X_2 Rent per Room	X_3 Children per Household	X_4 Persons per Room[1]
(a) SIMPLE CORRELATIONS				
X_2 Rent per room	$r_{12} = -.58$			
X_3 Children per household	$r_{13} = -.27$	$r_{23} = -.48$		
X_4 Persons per household[1]	$r_{14} = -.37$	$r_{24} = -.28$	$r_{34} = .31$	
X_5 Earnings per person[2]	$r_{15} = .45$	$r_{25} = .72$	$r_{35} = -.46$	$r_{45} = -.73$

(b) PARTIAL CORRELATIONS OF THE THIRD ORDER

Variables	Constants	Correlation of Coefficient
Lodgers and rent per room	Children, persons per room and earnings	$r_{12.345} = .52$
Lodgers and children	Rent per room, persons per room and earnings	$r_{13.245} = .05$
Lodgers and persons per room	Rent per room, children and earnings	$r_{14.235} = -.44$
Lodgers and earnings	Rent per room, children and persons per room	$r_{15.234} = -.36$

(c) MULTIPLE CORRELATION.

Dependent Variable	Independent Variablo	Coefficient of Correlation
X_1 Lodgers per household	X_2 Rent per room X_3 Children per household X_4 Persons per household[1] X_5 Earnings per person[2]	$R_{1.2345} = -.68$

[1]Lodgers not included in calculating average persons per room.
[2]Does not include lodgers or their earnings.

The high correlation between lodgers per household and rent per room (r_{12} = ·58) indicates that lodgers are most likely to be found where the rent per room is high. That the frequency of lodgers increases with the rent may also be seen from the following figures giving the average number of lodgers for households grouped according to the rental class in which they belong.

Rental Group	Lodgers per Household
Under $10	0·13
$10– 14	0·17
15– 24	0·16
25– 39	0·29
40– 59	0·32
60 and over	0·31

There is a very slight falling off for the households in the "$60 and over" class since these comprise homes rented by the most prosperous wage-earners. Moreover, the lodgers present are probably confined to households where the keeping of lodgers is a business, rather than spread over the group. In calculation of the correlation coefficients, the two end-groups have been excluded.

The following explanations may be given for the positive correlation: (1) If rent per room is considered as indicative of the quality of the room, lodgers choose the rooms where the rent is higher because they are interested primarily in comfort and convenience. (2) In the larger cities and particularly in the western cities where rent is high, lodgers are numerous, producing a spurious correlation. (3) In districts where rent per room is high it is probable that a room will rent well and there is stronger motivation for renting it. That factors (2) and (3) are important is evident from the high partial correlation $r_{12\cdot345}$ = ·52 when children, accommodation and family earnings are held constant. (4) Families forced into the lower rental groups by poverty will not have the accommodation necessary for taking in lodgers.

The correlation is changed very little when the other attributes of the families measured, *viz.*, number of children, accommodation and family earnings, are held constant, since the partial coefficient ($r_{12\cdot345}$) is ·52.

The inverse correlation r_{13} = − ·27 between lodgers per household and children per household does not result from lodgers avoiding children since the partial correlation $r_{13\cdot245}$ = ·05 is positive even if very low. Though the families with a large number of children may lack the accommodation and conveniences attractive to lodgers, the children are not, in themselves, an obstacle to taking in lodgers.

There is a significant inverse correlation r_{14} = − ·37 between lodgers per household and persons per room indicating that lodgers avoid overcrowding and lodge where there is sufficient accommodation. Since the partial correlation $r_{14\cdot235}$ = − ·44, when rent per room, average number of children and earnings are held constant, is higher, it would seem that ample accommodation is prerequisite to the taking in of lodgers. The following are the unweighted means of the averages for lodgers per household for groups of households with given average persons per room.

For Groups of Households with Given Persons per Room	Means of Averages for Lodgers per Household
More than 1	0·18
0·85–0·99	0·20
0·70–0·84	0·25
0·60–0·69	0·26
Under 0·60	0·27

Contrary to what might be expected there is a positive correlation r_{15} = ·45 between lodgers per household and earnings per person. When the groups of households in Table 7 are classified according to average earnings per person it is seen that the average of lodgers per household steadily increases with family earnings.

Earnings per Person $	Mean of Averages for Lodgers per Household
12–18	0·17
19–24	0·20
25–33	0·23
34–46	0·28
47–66	0·29

Lodgers are attracted to families in the higher earnings groups because these families have more room which is evident from the high negative correlation $r_{45} = -\cdot73$ between persons per room and earnings per person; also, because they have better rooms since there is a high positive correlation, $r_{25} = \cdot72$ between earnings and rent per room, a good indication of quality. When accommodation, number of children and quality are held constant there is a negative correlation $r_{15\cdot234} = -\cdot36$ between average number of lodgers and average earnings per person, from which it may be concluded that families in the lower earnings groups attempt to take in lodgers to supplement their income but that they are handicapped by lack of conveniences and accommodation—an illustration of the truth of the saying that poverty begets poverty.

The correlation $r_{34} = \cdot31$ between children per household and persons per room is not high considering that children do not require as much space as adults and it may be deduced that families provide fair accommodation for their children. It is, however, evident from the inverse correlation $r_{23} = -\cdot48$ that families with children are forced into the lower rental classes. It must always be remembered that the very lowest rental classes are excluded; consequently, that extreme conditions, as distinguished from typical conditions, are not covered by this discussion.

Examination of the high multiple correlation $R_{1\cdot2345} = \cdot68$ and the four partial correlations* $r_{12\cdot345} = \cdot52$, $r_{13\cdot245} = \cdot05$, $r_{14\cdot235} = -\cdot44$ and $r_{15\cdot234} = -\cdot36$ reveals that the first of the partial correlations contributes largely to the amount of multiple correlation. Since the correlation between lodgers and rent per room is partly spurious, as has been mentioned before, too much weight cannot be attached to the actual value of the multiple, but, in any event, it may be concluded from its height that the most important factors relating to keeping lodgers have been segregated.

Summary.—In summary it is evident that the families who take in lodgers are not those who live in uncomfortable homes and have restricted accommodation. Although children generally require all the available accommodation in the home they are not in themselves an obstacle to keeping lodgers. Undoubtedly, many wage-earning families take in a lodger because they have a spare room, which is most attractive to lodgers when it possesses modern comforts and conveniences. The low-wage groups are handicapped when they wish to take in lodgers to supplement their earnings because they do not have the accommodation and their rooms are unlikely to be attractive to lodgers. Keeping lodgers is thus more likely to be a source of income to the better class of wage-earners than to the poorer classes and cannot be resorted to as an amelioration for poverty.

*The correlations may be identified by reference to Statement XLV.

CHAPTER VI

THE HEADS OF PRIVATE FAMILIES

Ages of Family Heads.—Before discussing family attributes as they vary with the age of the head, it might be well to indicate the various types of families with which we are dealing. The census family or household does not coincide with the popular concept of family since it may include servants and lodgers and even several groups of persons belonging to sociologically separate families. Consequently, most of the family tables compiled from the 1931 Census are "private family" classifications in which servants and lodgers have been excluded and heterogeneous households, such as hotels and large rooming houses, have been broken up into private units. Of the private families, 86 p.c. include husband and wife living together, generally with children and other dependents. These are the normal private families. In addition, there are the families where husband and wife have been separated by death, by divorce, or because the husband's occupation forced him to make his permanent residence away from home, and the remaining head maintains the household. Every one classed as head of a household has also been classed as head of a private family with the result that, among heads of private families, are included persons who are householders but do not necessarily have family responsibilities. This accounts for the presence of "1-person families." The 1-person family may consist of a person living in a home by himself, a person surrounded by servants but without dependents, a lodging-house keeper with only servants and lodgers in the house, or the head of a partnership family as typified by two or more persons clubbing together to rent an apartment. In the last case one member of the group is listed as head of the household and the others as lodgers.

Median and Sextile Ages of the Heads of the Various Classes of Private Families.—Statement XLVI gives the median ages of the heads of private families. It is interesting to note from the first line that heads of normal families are considerably younger than the heads of all private families and much younger than the heads of 1-person families. One-half the heads of 1-person families are over 51·65 years of age and, bearing in mind the types of 1-person families enumerated in the previous paragraph, it is easily seen that the predominating type of head is the elderly person whose mate has died and whose children have left home. Family heads are youngest in the cities of 30,000 and oldest in the country villages.

XLVI.—MEDIAN AGES OF HEADS OF PRIVATE FAMILIES, RURAL AND URBAN BY SIZE GROUPS, CANADA, 1931

Locality	Median Age		
	All Private Families	Normal Families	One-Person Families
Total	45·75	43·92	51·65
Urban over 30,000	44·59	42·95	49·67
Urban 1,000-30,000	45·90	43·70	[1]
Rural	46·35	44·61	50·10
Urban under 1,000	48·07	45·69	[1]

[1]Over 55; age grouping in census does not permit calculation.

Since the median age is simply the middle point of the array, *i.e.*, one-half the heads are younger and the other half older, it is a very simple and satisfactory form of average, of use in comparing the ages of one group with another. But it is very important to know how the ages are distributed about the median, whether they are concentrated around it so that it is a very typical age or spread out evenly over a wide interval. That is, a measure of dispersion about the median is required.

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XLVII.—SEXTILE AGES OF HEADS OF PRIVATE FAMILIES, CANADA, 1931

Class of Head	First Sextile	Second Sextile	Median	Fourth Sextile	Dispersion about the Median
	years	years	years	years	years
All heads	31·77	39·10	45·75	52·94	6·92
Male heads living with their wives	31·13	37·94	43·92	50·77	6·42
Heads of one-person families	32·19	42·62	51·65	[1]	–

[1]Over 55; age grouping in census does **not** permit calculation.

Statement XLVII gives the ages of heads of private families by sextiles. The sextiles may be defined in this way: one-sixth of the heads are younger than the first sextile, two-sixths younger than the second, one-half younger than the third which is, of course, the same thing as the median, etc. Unfortunately the census compiles all families with heads over 55 in one group so that one can tell nothing of the age distribution of the heads above this age. The fifth sextile almost invariably comes above 55 as does, in some cases, the fourth, median, and even the second. To avoid this difficulty a study will be made of the age distribution of married males which is similar to that for heads of normal families since the vast majority of married males are living with their wives.

Concentration of Ages about the Median.—Where the fourth sextile is below 55 a fairly good measure of the dispersion about the median age may be obtained by dividing the interval between the second and fourth sextiles by 2. The result is more significant when it is regarded as an inverse measurement of the concentration about the median, a small dispersion being interpreted as indicating a high degree of concentration. Referring again to Statement XLVII, it is obvious that the ages of heads of normal families are concentrated more closely about the median than are those of heads of all classes of families, a fact to be anticipated since all private families include many elderly widowed heads.

XLVIII.—SEXTILE AGES OF HEADS OF NORMAL FAMILIES, RURAL AND URBAN, CANADA, 1931

Locality	Median	First Sextile	Second Sextile	Fourth Sextile	Dispersion (s)	Skewness[1]
	years	years	years	years	years	years
Total	43·92	31·13	37·94	50·77	6·42	0·136
Rural	44·61	31·39	38·39	51·72	6·67	0·133
Urban over 30,000	42·95	30·78	37·32	49·31	6·00	0·122
Urban 1,000-30,000	43·70	30·91	37·72	50·59	6·44	0·142
Urban under 1,000	45·69	32·42	39·37	52·95	6·79	0·138

[1]Skewness is obtained from the formula $\frac{(S_4 - S_3) - (S_3 - S_2)}{s}$ where S_2, S_3, S_4 represent the second, third and fourth sextiles.

Statement XLVIII deals only with heads of normal families. The youngest heads are those living in the large cities and their ages are most concentrated about the median. This concentration might be attributed merely to the fact that the median is closer to the lower age limit for family responsibilities but this explanation would be inadequate since the positive skewness, which measures the extent to which the ages above the median are spread out as compared with those below, is less than for any of the other groups. It is apparent that a higher proportion of the heads of private families are middle-aged in the cities with population over 30,000 than in the smaller places and rural districts.

Life History of the Average Family Head.—According to Statement XLIX only a small percentage of Canadian males between the ages of 20 and 25 are married. This, however, does not imply that few marry before reaching the end of the age interval and graduation of the vital statistics relating to marriages for the three-year period 1930-32 has revealed that 35·1 p.c. of Canadian males are married at the exact age of 25.* The median age of grooms, which should not be influenced to any appreciable extent by second marriages, was 26·7 years in 1931 and

*See *Memorandum re the Earning Power of Canadian Male and Female Workers, by Ages.* Dominion Bureau of Statistics, 1934

XLIX.—PERCENTAGE DISTRIBUTION OF MALES 20 YEARS OF AGE AND OVER, BY CONJUGAL CONDITION AND AGE GROUP, CANADA, 1931

Age Group	Percentage of Males 20 Years and over					
	All Classes	Single	Married		Widowed	Divorced
			Living with Wife	Wife Absent		
Total	100·00	31·32	58·24	5·63	4·68	0·13
20–24	100·00	85·66	12·68	1·55	0·10	0·01
25–34	100·00	41·28	52·34	5·61	0·68	0·09
35–44	100·00	17·60	73·50	6·68	2·06	0·16
45–54	100·00	13·66	74·90	6·81	4·44	0·19
55 and over	100·00	11·48	66·77	5·80	15·79	0·16

this would seem to be the age at which the average Canadian married man first assumes family responsibilities. Those who do so before marriage comprise a small group since, of the 84,016 heads of private families under 25 years of age, 60,390 or 71·9 p.c. were married and living with their wives. Of the remaining 23,626, 16,127 were 1-person families so that they were without dependents. It is interesting that 5,383 of these lived in the rural parts of the Prairie Provinces.

There is a considerable percentage of single males for each age group while widowed males are common only to the group 55 and over. Divorced males form a small proportion at all ages possibly because divorcés re-marry. It is surprising, however, to note the percentages of males who are married but not living with their wives. The number of these in 1931 may be estimated quite accurately at 176,671, *i.e.*, they formed a population in excess of the combined populations of the cities of Ottawa and Hull. Some will be legally separated from their wives or living apart due to incompatibility, but it is evident from Statement L that they are in the minority.

L.—MARRIED MALES SHOWING PERCENTAGE DISTRIBUTION OF THOSE NOT LIVING WITH THEIR WIVES, BY BROAD BIRTHPLACE GROUPS, CANADA, 1931

Birthplace Group	Married Males				
	Total	Living with Wife	Not Living with Wife		P.C. of Those not Living with Wife
			No.	P.C.	
Total	2,033,776	1,857,105	176,671	8·69	100·00
Canada	1,240,108	1,176,374	63,734	5·14	36·07
British Isles and Possessions	398,088	372,668	25,420	6·39	14·39
United States	93,161	86,821	6,340	6·81	3·59
Europe	266,795	213,302	53,493	20·05	30·28
Other countries	35,624	7,940	27,684	77·71	15·67

Of the married males not living with their wives, 30·28 p.c. were born in Europe and 15·67 p.c. were born in "other countries." The latter were largely Chinese and Japanese and the immigration restrictions against the entry of oriental women account for their leaving their wives at home.

LI.—PERSONS AND CHILDREN PER FAMILY OF TWO OR MORE PERSONS, BY AGE OF HEAD, COMPARED WITH AVERAGE EARNINGS AND WEEKS EMPLOYED PER MALE WAGE-EARNER, BY AGE GROUP, CANADA, 1931

Age Group	Average per Family with Head in Age Group		Average Earnings		Average Number of Weeks Employed per Male Wage-Earner
	Persons	Children	Per Male Wage-Earner	Per Person in Family	
			$	$	
Under 25	2·76	0·80	613	222	40·31
25–34	3·74	1·74	900	241	41·19
35–44	4·90	2·91	1,170	239	42·28
45–54	4·92	2·97	1,202	244	41·53
55 and over	3·48	1·59	1,013	291	38·36

It was remarked in Chapter III that the census data relating family attributes to age of head are very inadequate. Earnings of heads of families by age groups are not available and in the above statement average earnings and average number of weeks employed apply to all male wage-earners. The averages given are, consequently, very crude and it is impossible to attach much significance to them. It appears that the family head bears his maximum responsibility for dependents around the age of 45 and also that he reaches his maximum earnings then and is least liable to unemployment. Variance in average number of weeks employed with age may indicate reluctance on the part of employers to lay off married men with families. Now the average earnings per person seems to remain fairly constant with age of head indicating that earnings keep pace with family responsibilities but this holds only on the assumption that average earnings for heads of families in each age group approximate average earnings for all men. This assumption cannot be made since it is probable that young heads of families have much better average earnings than all males at the same ages while average earnings for middle-aged heads of families scarcely exceed those for all middle-aged males. It is probable, therefore, that earnings per person are lowest when the family is largest, *i.e.*, earnings do not keep pace with dependents. Lack of flexibility in income with increasing family responsibilities among the wage-earning class is undoubtedly one of the major causes of our declining birth rate. In this connection it is significant that wage-earners have smaller average families than employers and "own accounts."

In summary, the hypothetical average family head marries at about the age of 27. After marriage his family responsibilities and earnings increase steadily but his earnings fail to keep pace with the number of his dependents. The age of maximum family responsibility which roughly coincides with the age of maximum earning power is somewhat above 45. After this age family responsibility declines more quickly than earnings so that it is generally the most comfortable period.

An Age Index for Married Males.—It is evident that averages for various family attributes for different groups of families will be influenced considerably by the age distribution of the family heads. For instance, where the percentage of heads between the ages of 35 and 54 is high, we would expect the average family earnings to be high since a relatively large proportion of the family heads are at the climax of their economic efficiency. Age indices were calculated for married males rather than for family heads since the census compilations provide a finer division of ages for the former. An investigation revealed that the age distribution of all married males differs very little from that for married male heads of families. On the assumption that the age distribution for all Canadian married males fitted a skew-normal curve the following averages were obtained:—

	Years
Average age of married males	45·29
Median age of married males	44·17
Modal age of married males	41·93

These averages are undoubtedly very close to those for married male heads of families.

To derive an index descriptive of the age distribution of the married males, the ratio $\frac{m_3}{m_1 + m_6}$ was used, where m_3 = number of married males 35–54; m_1 = number of married males under 25; m_6 = number of married males over 65.

To obtain the ratio in an index form it was referred to the similar ratio derived from the probable age distribution of married males which would result from the mortality and marriage rates of 1931. The latter corresponds to the ratio for a stationary population. This index measures the percentage of family heads between the ages of 35 and 54 as opposed to the percentage who are comparatively young and comparatively old, or the percentage of heads of the fittest ages as opposed to the percentage of the least fit. The 25–34 and 55–64 age groups have been purposely omitted since they may be regarded as intermediate ages. Statement LII gives the indices so worked for provinces, rural and urban.

Common experience would lead one to expect the index to be highest for the urban-over-30,000 group and lowest for the urban-under-1,000 group since small villages usually contain a large number of families comprised of elderly persons. That the rural index is small when com-

LII.—AGE INDEX FOR MARRIED MALES, CANADA AND PROVINCES, 1931

Province	Urban over 30,000	Urban 1,000-30,000	Urban under 1,000	Rural
CANADA	237	173	137	155
Prince Edward Island	–	101	118	90
Nova Scotia	[1]	152	105	92
New Brunswick	[1]	149	142	116
Quebec	[1]	180	102	134
Ontario	[1]	156	82	137
Manitoba	[1]	211	89	190
Saskatchewan	[1]	289	238	237
Alberta	[1]	267	272	240
British Columbia	[1]	253	203	210

All-Canada index 178.
[1]Given by individual cities, see Statement LIII.

pared with that for the towns and cities illustrates the tendency for men to leave the country and find work in the cities at the ages when they are best fitted for employment. Accordingly, although the age distribution of Canadian married males is such that it is extremely favourable to high fertility and a large number of children per family, the advantage is partially offset by the concentration of those at the most favourable ages in the large cities where their reproductive powers seem to decrease.

Population Growth and the Age Distribution of Married Males.—Statement LIII gives the age index for the cities over 30,000. It is apparent that the city's rate of growth has a bearing on the age index. The coefficient of correlation between age index and population increase is 0·64. The actual size of the city seems to have little to do with the index except

LIII.—AGE INDEX, 1931, AND POPULATION INCREASE[1], 1921-1931, CITIES OF 30,000 AND OVER

City	Age Index	Population Increase	Rank in Age Index	Rank in Population Increase
CITIES WITH INDEX GREATER THAN CANADA				
Saskatoon	331	40·54	1	2
Regina	329	35·29	2	5
Calgary	312	24·42	3	12
Edmonton	293	25·73	4	10
Vancouver	289	33·81	5	7
Winnipeg	281	18·14	6	12
Windsor	259	38·85	7	3
Verdun	259	58·84	8	1
Montreal	253	24·44	9	11
Toronto	224	17·32	10	14
Trois-Rivières	216	36·91	11	4
Hamilton	215	26·61	12	9
Quebec	193	27·11	13	8
Ottawa	186	15·06	14	15
CITIES WITH INDEX LESS THAN CANADA				
Kitchener	173	29·32	15	6
Halifax	167	1·53	16	18
Victoria	166	0·91	17	19
Brantford	165	2·22	18	17
London	160	14·32	19	16
Saint John	156	0·73	20	20

[1]Increase 1921-31 expressed as percentage of 1931 population.

in so far as the very large cities have all been increasing in population. Fourteen of the cities, including all the cities with populations over 100,000 and, therefore, the great bulk of the urban-over-30,000 population, have indices greater than that for Canada. These cities augmented their populations considerably during the ten-year period 1921-31, each having an increase of over 15 p.c., while only one of the six cities with age index less than that for all Canada had a percentage increase of over 15. It is evident that the age distribution of the married males in the cities of over 30,000 population is concomitant to their growth and that any smaller city, town or village growing at the same rate might have a similar distribution. This fact was borne out in Statement LII where it was seen that the age index for the married males for the rural parts of the provinces of Saskatchewan, Alberta and British Columbia was well over 200, comparable with that for the large industrial centres of the East and much higher than the index for the cities with a relatively stationary population. The families of the large Canadian cities are,

therefore, unusual in the respect that an abnormally high proportion have middle-aged heads and a very low proportion have elderly heads.

The implications involved in this observation are: first, the ages of the family heads in the cities of 30,000 and over are concentrated in the ages of maximum economic efficiency due to the fact that these cities have been augmenting their population by importing workers at the fittest ages. As the populations of the cities become constant, the age distribution of the married males will approach that for the small villages and rural districts in 1931. There will, consequently, be a higher proportion of family heads over 65 in the big cities who must be supported by old age pensions, etc., from taxes payable by a smaller proportion of family heads under 65. On the other hand, there will be a smaller percentage of family heads at the ages when their demands for employment are keenest. Secondly, it is evident that, if the cities are to deplete the small towns and rural districts of their middle-aged populations, the latter may not feel called upon to bear the entire burden of supporting the retired people who remain. From this angle the argument that old age pensions are a charge to be borne by the provinces or the Dominion and not by the municipalities is strengthened. Thirdly, the average earnings for city families must undoubtedly be given a considerable upward bias due to the fact that the age distribution of the heads is favourable to high earnings. Fourthly, since a high proportion of the heads of families for the cities of 30,000 and over are at the age when they assume maximum family responsibilities, one might expect the average size of the urban-over-30,000 family to be large. This, of course, is not the case. The difference in the average size of the rural and urban families thus becomes more significant when it is remembered that the age distribution of the heads is more favourable to a high average size in the large cities than in the small towns and rural districts. Using data for forty-seven localities, *viz.*, the twenty individual cities of 30,000 and over and the three remaining rural and urban divisions of the nine provinces, a correlation ($r = \cdot 77$) was found between our age index and floating population as measured by the percentage of the population born outside the province. Furthermore, there is a negative correlation ($r = -\cdot 63$) between average size of families* with heads 35–54 and floating population so that, although a large floating population provides a locality with a high proportion of married males at the ages when their families are largest, it actually reduces the average size of the family because its families are characteristically small. The following test has been carried out to ensure that the last-mentioned correlation is not due merely to a simultaneous correlation between size of family and size of city since large cities have large floating populations.

The Influence of Floating Population on Family Size.—Statement LIV compares average size of families with heads 35–54 (excluding 1-person families) with floating population for cities of similar size.

*For all private families except 1-person families

LIV.—AVERAGE SIZE OF FAMILIES[1] WITH HEADS 35-54 YEARS OF AGE AND FLOATING POPULATION, CITIES OF 30,000 AND OVER, 1931

City	(1) Average Size of Family	(2) Rank	(3) P.C. of Population Born outside Province	(4) Rank (inverted)	(5) Difference in Rank
(A) Cities over 100,000—					
Quebec	5·75	1	3·85	1	-
Montreal	4·82	2	22·38	2	-
Ottawa	4·48	3	32·07	3	-
Winnipeg	4·21	4	57·71	6	2
Hamilton	4·12	5	41·65	4	1
Toronto	3·96	6	41·02	5	1
Vancouver	3·84	7	71·33	7	-
(B) Cities 50,000-100,000—					
Verdun	4·59	1	36·78	3	2
Halifax	4·56	2	19·06	1	1
Regina	4·29	3	59·72	5	2
Edmonton	4·24	4	64·43	6	2
Windsor	4·16	5	39·66	4	1
Calgary	4·02	6	68·21	7	1
London	4·01	7	28·36	2	5
(C) Cities 30,000-50,000—					
Trois-Rivières	5·93	1	5·95	1	-
Saint John	4·48	2	17·56	2	-
Kitchener	4·41	3	23 35	3	-
Saskatoon	4·31	4	63·62	5	1
Brantford	4·19	5	31·53	4	1
Victoria	3·86	6	65·91	6	-

Rank correlations—Group A, ·89; Group B, ·29; Group C, ·94.
[1]Of two or more persons.

Since the cities in each of the groups (A), (B) and (C) do not vary greatly in size as between themselves, the influence of such size on the average size of their families may be disregarded when the groups are studied separately. Comparison of columns 2 and 4 shows that the larger the percentage of the population born outside the province in which the city is situated the smaller the average size of the family. London, Ont., is the only city which is notably an exception to the rule. It appears safe to conclude that the negative correlation between average size of family and floating population is not merely due to a simultaneous correlation between average size of family and size of city.

LV.—AVERAGE SIZE OF FAMILIES[1] WITH HEADS 35-54 YEARS OF AGE AND FLOATING POPULATION, RURAL AND URBAN, CANADA, BY PROVINCES, 1931

Province	Persons per Family	Rank	P.C. of Population Born outside Province	Rank (inverted)	Difference in Rank
RURAL					
Prince Edward Island	5·32	5	4·59	2	3
Nova Scotia	5·28	6	6·18	3	3
New Brunswick	5·87	2	9·37	4	2
Quebec	6·90	1	3·28	1	–
Ontario	4·71	8	20·11	5	3
Manitoba	5·35	4	39·76	6	2
Saskatchewan	5·57	3	48·96	7	4
Alberta	5·17	7	56·15	8	1
British Columbia	4·22	9	62·95	9	–
Rank correlation	–	–	–	–	·57
URBAN 1,000-30,000					
Prince Edward Island	4·88	4	10·25	1	3
Nova Scotia	5·15	2	17·15	4	2
New Brunswick	4·98	3	16·74	3	–
Quebec	5·70	1	12·00	2	1
Ontario	4·38	8	27·13	5	3
Manitoba	4·73	5	49·60	6	1
Saskatchewan	4·56	6	59·05	7	1
Alberta	4·51	7	60·07	8	1
British Columbia	4·18	9	64·95	9	–
Rank correlation	–	–	–	–	·78
URBAN UNDER 1,000					
Prince Edward Island	4·79	4	10·87	3	1
Nova Scotia	4·84	3	6·87	2	1
New Brunswick	4·88	2	13·85	4	2
Quebec	5·78	1	6·38	1	–
Ontario	4·38	8	14·68	5	3
Manitoba	4·76	5	45·36	6	1
Saskatchewan	4·76	6	55·74	7	1
Alberta	4·53	7	58·90	8	1
British Columbia	4·19	9	65·38	9	–
Rank correlation	–	–	–	–	·85

[1]Of two or more persons.

Statement LV continues the comparison of average size of family with floating population. Rural Manitoba and Saskatchewan with large floating populations when compared with Ontario have also considerably larger average families. The small average size of the Ontario rural family and the large size of the Saskatchewan rural family are striking departures from the rule that family size varies inversely as the floating population and must be characteristic of other features of their populations, probably racial content and the presence or absence of very large families.

The Multiple Correlation of Family Size with Floating Population and Age Index of Married Males.—Two of the factors which determine the average size of the private family in a given locality have been isolated, *viz.*, age distribution of married males and percentage of population born outside the province. The first may be taken as an approximation to the age distribution of the married male heads of families and the second as the measurement of the floating population. The simple correlation of average size of normal private families is −·32 with age index of married males, and −·57 with floating population. The multiple regression

equation relating these three factors is $Z = 4 \cdot 064 + 0 \cdot 0021 X - 0 \cdot 0169Y$, where Z represents the average size of the normal family, X the age index of married males, and Y the floating population.

The square of the multiple correlation between family size and the two factors is $R^2 = \cdot 37$, indicating that they account for 37 p.c. of the variance in average family size. The correlations given in this section may all be considered significant since they were worked for forty-seven localities, *viz.*, the twenty individual cities of 30,000 and over and the remaining three rural and urban divisions of the nine provinces.

Summary of correlations:—

Age index and population increase 1921-31 for 20 cities = ·64.

Age index and floating population*= ·77.

Average size of normal families and age index*= ·32.

Average size of normal families and floating population*= — ·57.

Average size of families with heads 35-54 and floating population*= — ·63.

Multiple correlation of average size of normal families with age index and floating population*= ·61.

Children per Family by Age of Head.—We have been devoting our attention to the age distribution of heads of families in various regions and its bearing on the average size of family. The changes in the composition of the average family as its head grows older will now be considered.

LVI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 175 RURAL-URBAN GROUPS ACCORDING TO INTERVALS OF AVERAGE FAMILY SIZE (FAMILIES OF TWO OR MORE PERSONS) IN RELATION TO AGE OF FAMILY HEAD, CANADA, 1931

Average Family Size Group	Age Group					
	Under 25	25-34	35-44	45-54	55 and over	Total
2·3-2·4	1					1
2·5-2·6	9					9
2·7-2·8	21				1	22
2·9-3·0	4				3	7
3·1-3·2		5			11	16
3·3-3·4		1			9	10
3·5-3·6		14			4	18
3·7-3·8		7	1	1	4	13
3·9-4·0		4	2	2	2	10
4·1-4·2		2	3	4	1	10
4·3-4·4		1	3	5		9
4·5-4·6		1	7	5		13
4·7-4·8			4	6		10
4·9-5·0			4	2		6
5·1-5·2			5	3		8
5·3-5·4			2	2		4
5·5-5·6			1	2		3
5·7-5·8			2	2		4
5·9-6·0						
6·1-6·2						
6·3-6·4						
6·5-6·6						
6·7-6·8			1			1
6·9-7·0				1		1
Total	35	35	35	35	35	175
Mean size for columns	2·76	3·74	4·90	4·92	3·48	

The average sizes of families with heads in five age groups for the rural and urban parts of the nine provinces are given in Table 8, Part II, page 192. The above scatter diagram has been constructed from these averages. Differences in the average number of children account for the wide dispersion in the average sizes of families with middle-aged heads. Since the number

*For 47 cases.

of children is neeessarily limited in families with heads under 25 or over 55, the dispersion in the averages for these groups is very small. The diagram shows in a striking manner the large average size of the family of the rural Quebeeer, 6·82 for families with heads 35-44 years of age and 6·98 for families with heads 45-54.

LVII.—PERSONS PER PRIVATE FAMILY OF TWO OR MORE PERSONS, BY AGE OF HEAD, RURAL AND URBAN, CANADA, 1931

Age of Head	Average Size of Family			
	Rural	Urban over 30,000	Urban 1,000-30,000	Urban under 1,000
Under 25	2·81	2·67	2·80	2·77
25-34	3·97	3·41	3·75	3·84
35-44	5·37	4·32	4·83	4·99
45-54	5·41	4·37	4·80	4·83
55 and over	3·66	3·34	3·32	3·12

The rural family is largest for every age group and the urban-over-30,000 family is smallest exeept for heads 55 and over, when it is larger than for the other urban groups. This is probably beeause more ehildren were staying at home in the large eities than in the smaller eities and towns. The influenee on the size of the family of ehildren leaving home may be observed more readily from an examination of Statement LVIII.

LVIII.—AVERAGE NUMBER OF CHILDREN PER FAMILY OF TWO OR MORE PERSONS, BY AGE OF HEAD, RURAL AND URBAN, CANADA, 1931

Age of Head	Children per Family			
	Rural	Urban over 30,000	Urban 1,000-30,000	Urban under 1,000
Under 25	0·84	0·71	0·84	0·83
25-34	1·96	1·42	1·76	1·85
35-44	3·36	2·36	2·85	3·02
45-54	3·42	2·46	2·86	2·88
55 and over	1·74	1·53	1·44	1·21

The faet that *middle-aged* parents living in small eities and towns have more ehildren living at home than those in the eities over 30,000 while the reverse is true of the older parents provides eonelusive evidenee that ehildren are staying at home longer in the large plaees than in the small. To eompare the rural families with the urban is more diffieult. The number of ehildren at home in families with heads over 55 is larger than for any of the urban groups but the original family is mueh larger to begin with. It is interesting to express the average number of ehildren for families with heads over 55 as a pereentage of the average for families with heads 35-44. It would appear from Statement LIX that ehildren stay at home longest in the eities over 30,000, to about the same extent in the rural and the urban-1,000-30,000 distriets, and leave home earliest in the small villages. Sinee these percentages provide the best means available for eomparing, from group to group, the extent to whieh ehildren stay at home they are given by provinces.

LIX.—AVERAGE NUMBER OF CHILDREN IN FAMILIES WITH HEADS 55 YEARS OF AGE AND OVER AS PERCENTAGE OF AVERAGE FOR FAMILIES WITH HEADS 35-44 YEARS OF AGE, CANADA AND PROVINCES, 1931

Province	Rural	Urban over 30,000	Urban 1,000-30,000	Urban under 1,000
CANADA	52	65	51	40
Prince Edward Island	50	-	52	45
Novn Scotia	48	61	52	45
New Brunswick	47	57	52	43
Quebec	46	68	52	36
Ontario	51	62	47	36
Manitoba	61	74	54	46
Saskatchewan	61	66	54	43
Alberta	61	65	54	50
British Columbia	54	64	59	48

There is probably a high correlation between the percentages given in the above statement and the opportunities for employment, higher education, etc., which the localities afford young people. It would be difficult to express the latter quantitatively or even to rank the localities according to their opportunities. It is obvious, however, that the percentages are high throughout Canada in the cities of over 30,000, while they are consistently low in the small villages, particularly those in Quebec and Ontario where there would be little employment for young persons. The glamour of the large city, particularly attractive to those just past childhood, undoubtedly lures many young people away from their village homes. The rural families seem to keep a fairly large proportion of their children at home, probably because of the employment available on the home farm.

It must, of course, be borne in mind that these observations were made under 1931 conditions when the economic depression, then at its height, would certainly disturb the normal manner in which children were leaving home either to seek employment elsewhere or to set up a home of their own. It is quite possible that, had 1931 been a good year, the observations would have been considerably altered. For example, there might be fewer children staying on the farm and a large number of children in the larger cities, though not leaving the city, might be marrying and establishing separate homes. The family data available from the Census of 1921 are insufficient to afford comparison, and in any case 1921 was also a depression year.

One-Person Families.—It was noted at the beginning of the chapter that considerable light was cast by their age distribution on the identity of persons comprising 1-person families. Statement XLVI shows that their median age is much older for both rural and urban parts than that for heads of families of all types.

LX.—COMPARISON OF SEXTILE AGES FOR HEADS OF ONE-PERSON PRIVATE FAMILIES WITH SEXTILE AGES OF HEADS OF ALL TYPES OF PRIVATE FAMILIES, RURAL AND URBAN BY SIZE GROUPS, CANADA, 1931

Sextile	Rural		Urban over 30,000		Urban 1,000-30,000		Urban under 1,000	
	One-Person Families	All Families	One-Person Families	All Families	One-Person Families	All Families	One-Person Families	All Families
1st	30·84	31·78	32·34	31·53	37·63	31·87	33·65	33·14
2nd	40·91	39·36	41·44	38·49	49·37	39·21	46·14	40·77
Median	50·10	46·35	49·67	44·59	[1]	45·90	[1]	48·07
4th	[1]	53·72	[1]	51·36	[1]	53·20	[1]	[1]

[1] Over 55; age grouping in census does not permit calculation.

Statement LX brings out the interesting observation that the differences between the first sextiles are small, although the median ages of persons who are heads of 1-person families are consistently much older than that for heads of all families. In fact, the first sextile for rural heads of 1-person families is under that for rural heads of all private families, reflecting a considerable number of young bachelor farmers, particularly in the Prairie Provinces. It has already been inferred that older persons, left alone by the death of their mate and by their children leaving home, are the predominating type among the 1-person families. To these might be added the young bachelor farmers preparing a home for a prospective family. The majority of 1-person families as they are compiled by the census are, consequently, not the antithesis of the normal family but generally represent first or last stages in its cycle of evolution and disintegration.

LXI.—PERCENTAGE DISTRIBUTION OF PRIVATE FAMILIES OF ONE PERSON, RURAL AND URBAN BY SIZE GROUPS, CANADA, 1931

With Heads of Given Ages	Canada	Rural	Urban		
			Over 30,000	1,000-30,000	Under 1,000
All ages	100·0	52·8	24·3	16·7	6·2
Under 25	6·0	3·7	1·3	0·6	0·4
25–34	14·9	8·7	3·8	1·6	0·8
35–44	16·4	8·8	4·7	2·1	0·8
45–54	19·2	10·2	5·1	2·9	1·0
Over 55	43·6	21·4	9·5	9·5	3·2

This inference is further substantiated by an examination of Statement LXI. Over one-half the 1-person families are found in the rural districts and only 24·3 p.c. in the urban-over-30,000 group, a small proportion considering the population. That a large proportion of the 1-person families are found in the rural districts is partly a result of unfavourable conditions for marriage there. It appears that the Canadian who avoids family responsibilities does so by necessity rather than by choice.

Bachelor Families.—To-day the question arises of whether an increasing tendency to avoid marriage and the ensuing responsibilities is noticeable among young persons in the metropolitan centres. It is said that many young women prefer living by themselves or with one or two others in flats and apartments where they may enjoy most of the comforts of home without any responsibilities. What statistics are provided by the census with regard to this interesting movement? As has already been stated, partnership families are classed as 1-person families, one partner being considered as a head and the others as lodgers. Consequently, 1-person families should include most of the "bachelor girls" though they also include many other heterogeneous types of families. Assuming that 75 p.c. of the 1-person families with heads 25-54 years of age are of the above type, we find there were 27,620 in 1931. If these were, on the average, comprised of 2 persons, they would represent a population of 55,240, or 4·24 p.c. of the total urban-over-30,000 population between the ages of 25 and 54, 1,303,965. The conjugal condition of urban-over-30,000 population, 25-54* years of age in 1931 was: married, 950,650; single, widowed or divorced, 349,534.

Of 349,534 unmarried persons between the ages of 25 and 54, it is estimated that only 15·8 p.c. live in bachelor apartments. Of the remainder some, though unmarried, are members of or support private families, some are inmates of institutions, some are lodgers, etc. It has already been found that the vast majority of Canadian lodgers prefer to lodge in the type of household where they may enjoy home privileges to the fullest extent.

One-Person Households.—Of 1-person families, 59·2 p.c. consist of persons living by themselves; the heads of the remaining 40·8 p.c. live with servants and lodgers. The percentage living by themselves is very high in the urban-under-1,000 group and since, according to Statement LXI, 3·2 out of 6 of the heads of village 1-person families are over 55, the high percentage is easily accounted for; there must be a large number of elderly persons living by themselves in small villages.

LXII.—PERCENTAGES OF ONE-PERSON FAMILIES COMPRISED OF PERSONS LIVING ALONE, RURAL AND URBAN BY SIZE GROUPS, CANADA AND PROVINCES, 1931

Locality	Canada[1]	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
All classes	59·2	59·6	56·6	53·9	51·8	54·3	58·2	68·2	69·6	64·5
Rural	65·7	63·4	61·5	58·1	62·0	61·6	63·2	69·7	72·4	68·4
Urban—										
Over 30,000	46·9	-	38·4	45·5	44·4	41·9	45·3	53·9	60·1	57·1
1,000-30,000	54·0	43·5	50·7	45·8	46·7	53·3	56·6	67·5	61·6	62·3
Under 1,000	66·2	50·0	55·8	56·6	59·2	67·3	69·4	67·9	67·8	71·9

[1]Exclusive of Yukon and Northwest Territories.

In summary, there are 270,312 Canadian heads of 1-person families. Of these, 161,850 or 3·19 p.c. of the population over 29 years of age live alone. It has been found that these are, for the most part, persons over 55 whose families have disintegrated and persons living in rural districts where conditions are unfavourable to marriage and the maintenance of a family is difficult. These people are not avoiding family responsibilities by choice but through necessity.

*Excluding those whose conjugal condition was not stated.

Illiteracy.—In the census monograph entitled *Illiteracy and School Attendance*, by Mr. M. C. MacLean, the illiteracy of family heads is dealt with very thoroughly. Some of the most important conelusions so far as they affect the family are repeated here.

(1) The ages of their children would indicate that illiteracy is most common amongst older heads.

(2) Illiterates as a class show more children per family.

(3) There are smaller proportions of illiterates undertaking responsibilities for adult dependents.

(4) There are more evidences of illegitimacy amongst illiterates.

(5) Not only are the children of illiterate parents more illiterate than those of literate parents but the illiteracy of the children seems to be proportionate to the degree of illiteracy of the parents. Thus when both parents are illiterate the illiteracy of the children is more than twice as great as when only one parent is illiterate.

The proportion of normal families with at least one head illiterate has been declining. It was 6·5 p.c. in 1931. Obviously, the average size of the families of illiterates has had a small and steadily decreasing weight in determining the average size of all families. It follows that the decrease in illiteracy amongst family heads must be considered a faetor of minor importance in explaining the dceline in the average size of Canadian families.

CHAPTER VII

GUARDIANSHIP CHILDREN AND ADULT DEPENDENTS

Composition of Average Family.—The average size of the Canadian private family consisting of 2 or more persons, 4·22 persons, may be subdivided as follows:—

Total	4·22
Heads	1·00
Wives living with husbands	0·86
Own children	2·27
Guardianship children	0·04
Other dependents	0·05

Own children account for more than one-half the average size of the family and are largely responsible for any dispersion in the average sizes of different groups of families. This was strikingly illustrated by the scatter diagram of Chapter VI, Statement LVI, page 72, where a small dispersion was observed from group to group in the average sizes of families whose heads were under 25 or over 55 years of age, periods at which the numbers of their children were necessarily limited, and a large dispersion was observed in the sizes of families with heads between 35 and 54 years, periods at which they have the largest number of children living at home. On the other hand, dispersion in the average sizes of the families for different groups due to variations in the average number of wives living with their husbands is practically negligible since it may be seen in Statement LXIII that it varies very little.

LXIII.—AVERAGE NUMBER OF WIVES LIVING WITH THEIR HUSBANDS PER PRIVATE FAMILY OF TWO OR MORE PERSONS, RURAL AND URBAN BY SIZE GROUPS, CANADA, 1931

Age of Head	Total	Rural	Urban		
			Over 30,000	1,000-30,000	Under 1,000
All ages	0·86	0·87	0·85	0·86	0·86
Under 25	0·89	0·87	0·91	0·91	0·85
25-34	0·94	0·94	0·94	0·94	0·93
35-44	0·91	0·93	0·90	0·91	0·90
45-54	0·86	0·88	0·84	0·86	0·86
55 and over	0·76	0·78	0·72	0·75	0·78

The constancy in the proportion of private families of two or more persons with husband and wife living together as between rural and urban parts is very marked in each age group. It would seem that every type of community has virtually the same proportion of its families with husband and wife living together. Inversely, there can be no tendency for the families with unmarried heads to be confined largely to the large cities, small towns or rural districts, *i.e.*, they are equally numerous in country and city.

That a similar constancy in the proportion with husband and wife living together exists between families with native-born and foreign-born heads is evident from Statement LXIV.

LXIV.—AVERAGE NUMBER OF WIVES LIVING WITH THEIR HUSBANDS PER PRIVATE FAMILY OF TWO OR MORE PERSONS, BY AGE AND NATIVITY OF HEAD, CANADA, 1931

Age of Head	Nativity of Head					
	Total	Canadian-Born	British-Born	United States-Born	European-Born	Elsewhere-Born
All ages	0·86	0·85	0·87	0·88	0·90	0·88
Under 25	0·89	0·89	0·91	0·87	0·89	0·75
25-34	0·94	0·94	0·94	0·93	0·96	0·94
35-44	0·91	0·91	0·92	0·91	0·94	0·91
45-54	0·86	0·85	0·88	0·87	0·88	0·86
55 and over	0·76	0·74	0·77	0·79	0·81	0·80

The average is lowest for families with Canadian-born heads and highest for families with European-born heads. The averages would have been considerably changed, of course, if the 1-person families had not been omitted in their calculation.

Variation in Averages for Own Children, Guardianship Children and Adult Dependents.—The averages are so small in every case that they have little effect on the average size of the family but their variation with the size of the family may be significant. Do family heads without children of their own adopt children or shelter dependent relatives motivated by an instinctive desire to have about them a family of a certain typical size? The hypothesis that they do might be tested by compiling a table such as the following:—

Households with Given Number of Children	Number of Guardianship Children per Household	Number of Other Dependents per Household	Number of Lodgers per Household
1 2 etc.			

The above table would tell us whether "persons other than own children" were found most frequently in families with a low quota of children and least frequently in families with a high quota. Unfortunately, it would obscure the influence of the ages of the heads of the families, always an important factor in any study of family attributes. As a result, we should have to limit the families to those in a fixed age interval and then we should know nothing of the families with heads outside the interval. With these difficulties in mind, it was decided that it would be best to limit the study to an analysis of the census compilations which were already available although not designed for the purposes of this investigation.

LXV.—DISPERSION IN AVERAGES PER FAMILY OF TWO OR MORE PERSONS FOR OWN CHILDREN, GUARDIANSHIP CHILDREN AND ADULT DEPENDENTS, BETWEEN AGE GROUPS OF HEADS AND BETWEEN PROVINCES, CANADA, 1931

Item	Dispersion					
	Own Children		Guardianship Children		Adult Dependents	
	(a) Age Groups	(b) Provinces	(a) Age Groups	(b) Provinces	(a) Age Groups	(b) Provinces
$\bar{x}$—unweighted mean of averages	1·97	2·19	0·041	0·045	0·042	0·051
σ—standard deviation of averages	0·86	0·38	0·022	0·019	0·016	0·026
$\sigma/\bar{x}$—coefficient of dispersion of the averages	0·44	0·18	0·54	0·42	0·38	0·50

In Table 8, Part II, page 192, the averages per family of two or more persons for own children, guardianship children and adult dependents are given for five age groups of heads by the rural and urban parts of the nine provinces. In Statement LXV the dispersions in the averages (a) from age group to age group and (b) from province to province are given for the three classes of members of private families. In calculating both the age dispersions and the provincial dispersions, rural and urban-size-group averages were taken separately so that there were twenty age groups and thirty-five provincial groups.

Obviously, relative variability in the averages for the three classes of members of families is best measured by the coefficient of dispersion of the averages. As would be expected, the variation in the averages for own children per family is greater between age groups of heads than between provinces. This is also true of the variation in the averages per family for guardianship children although the difference in the coefficients is not so marked. In the case of adult dependents the provincial dispersion exceeds the age dispersion so that age of head does not appear to have so much to do with the presence in the family of adult dependents as with the presence of children. The age dispersions for the averages per family for own children, guardianship children and adult dependents differ very little but the provincial dispersion in the averages for own children is much less than that in the averages for guardianship children and adult dependents.

It appears that the averages for the last two classes vary considerably from province to province. Reference to Table 8, Part II, page 192, will reveal that guardianship children and adult dependents are much more numerous in families in the Maritime Provinces than in the other provinces.

Lodgers, Guardianship Children and Adult Dependents as Substitutes for Own Children.—It was seen in Chapter VI that the average family with middle-aged heads was larger than the average family with young heads and old heads due to the large number of children living at home. Now if there is a tendency for Canadian households to be of a typical size, say, from 3 to 5 persons, one would expect that the lack of own children in the families whose heads were under 25 or over 55 years of age should be partially compensated for by the keeping of lodgers, the presence of adult dependents and the adoption of guardianship children.

It is unfortunate that, since lodgers do not appear in the private-family tables of the 1931 Census, but only in the household tables, data with regard to them are very limited. In Chapter V the inadequacy of data was met by an intensive correlation analysis which indicates that lodgers were most generally found in households where accommodation is not limited, possibly because the family was small. Moreover, a simple negative correlation, $r = -\cdot 27$, was found to exist between lodgers per household and children per household. There is, therefore, considerable statistical evidence that the smaller families most frequently take in lodgers.

LXVI.—NUMBER PER FAMILY OF TWO OR MORE PERSONS, OF PERSONS, OWN CHILDREN, GUARDIANSHIP CHILDREN AND ADULT DEPENDENTS, BY AGE OF HEAD, CANADA, 1931

Age of Head	Number per Family			
	Persons	Own Children	Guardianship Children	Adult Dependents
All ages	4·22	2·27	0·039	0·049
Under 25	2·76	0·80	0·048	0·026
25-34	3·74	1·74	0·023	0·034
35-44	4·90	2·91	0·023	0·050
45-54	4·92	2·97	0·034	0·054
55 and over	3·48	1·59	0·071	0·056

That the average number of guardianship children per family is largest for families with heads at the ages when the average number of children is smallest may be observed from Statement LXVI. It is significant that the family heads under 25 years of age support more guardianship children, on the average, than heads in any other age group except those over 55 who may adopt children, not because their family is small, though it will be small, but out of a sense of responsibility for orphaned grandchildren.

LXVII.—GUARDIANSHIP CHILDREN, BY TYPE OF GUARDIAN, CANADA, 1931

Relationship of Guardian	No. of Private Families with Guardianship Children	P.C. of Guardians of Given Type	No. of Guardianship Children	P.C. of Children with Guardian of Given Type	No. of Guardianship Children per Family with Guardianship Children
All types	67,952	100·00	84,108	100·00	1·24
Grandfather	16,552	24·36	21,356	25·39	1·29
Grandmother	5,782	8·51	7 551	8·98	1·31
Uncle	17,027	25·06	20 342	24·19	1·19
Aunt	2,906	4·28	3,660	4·35	1·26
Brother	4.045	5·95	5,540	6·59	1·37
Sister	889	1·31	1,321	1·57	1·49
Adopted	15,148	22·29	17,780	21·14	1·17
Other person	5,603	8·25	6,558	7·80	1·17

Examining Statement LXVII, we learn that 34·37 p.c. of the guardianship children living in private families are under the guardianship of grandparents whom it is safe to assume are practically all heads of private families and over 55 years of age. Consequently, of the 40,424 guardianship

children in private families with heads over 55 years of age, slightly less than 28,907 or 71·51 p.c. are under the supervision of their grandparents and of the 0·071 guardianship children per family with head 55 years of age and over nearly 0·050 are living with their grandparents. Thus there are little more than 0·021 guardianship children, other than the grandchildren of the head, per family with head over 55. It would, thus, be incorrect to take the data of Statement LXVI as proof that the heads of families in the oldest age group adopt children solely to make up for the deficiency in the number of own children. They do so largely out of a sense of responsibility for the care of orphaned grandchildren; nevertheless, the latter do help to fill the vacancies in the family caused by the head's own children leaving home. It is interesting to note from Statement LXVII that the number of guardianship children per family with guardianship children is highest when the guardians are brothers or sisters of the children, indicating that many of the guardians of this type assume the responsibilities of caring for an entire family. This may account for the large number of guardianship children per family with head under 25 years of age. However, only 8·16 p.c. of all guardianship children have brothers or sisters as guardians. On the other hand, of the guardians who adopt children, "other" types of guardians, have the lowest average number of guardianship children per guardian showing that they most usually shelter a single ward. In summary, guardianship children frequently fill the place of own children in families with heads under 25 or over 55 years of age, although the tendency for older heads to shelter guardianship children would appear to be due to a sense of responsibility for the welfare of their grandchildren rather than a desire to have a family about them.

What becomes of orphaned children and those whose parents are mentally or physically unable to support them and direct their development? Does the family then fail as a social organization and is its place more efficiently filled by the institution? The Census of Institutions lists for June 1, 1931, 338 institutions having under their care or supervision 41,782 dependent and neglected children. These institutions, however, are complementary rather than supplementary to the family in the provision of homes for such children.

Only 21,117 of the children mentioned above actually live in institutions and these include 1,687 in institutions for the blind and for the deaf and dumb. Since the latter comprise a special group, there are only 19,430 normal children permanently sheltered in institutions as compared with 84,108 guardianship children in private families. There are, consequently, 4·33 guardianship children living in private homes to every one in an institution. In addition, 59,770 or 71·06 p.c. of the guardianship children in private families are with relatives and 17,780 or 21·14 p.c. are adopted children. Only 6,558 or 7·80 p.c. have no ties with the family either by kinship or adoption. Although the institution is essential for the supervision and distribution of the care of homeless children, it does not generally provide a home for them. In fact, it would appear that, generally, orphaned children are cared for by grandparents, aunts, uncles, brothers and sisters without the intervention of the institutions.

The scatter diagram shown below describes the behaviour of the number of guardianship children per family with the age of the head for 35 divisions of the population of Canada, *viz.*, the rural and three urban sections of the population of each of the nine provinces. The averages are generally higher and are more widely dispersed for families with heads in the two end age groups. The unweighted means of the averages for all 35 sections show the same trend with the age of the head as did the weighted averages appearing in Statement LXVI which establishes the trend as typical of all parts of Canada. That the averages act in the same way for families with both Canadian- and foreign-born heads is evident from Statement LXIX. Canadian-born heads of families have the largest average number of guardianship children dependent upon them, probably because they are supporting a greater number who are of their own kin.

LXVIII.—SCATTER DIAGRAM SHOWING VARIATION IN AVERAGE NUMBER OF GUARDIANSHIP CHILDREN PER PRIVATE FAMILY OF TWO OR MORE PERSONS WITH AGE OF HEAD, BETWEEN THE RURAL AND URBAN-BY-SIZE-GROUP PARTS OF THE PROVINCES, CANADA, 1931

Average Number of Guardianship Children per Family	Age of Head					
	Under 25	25-34	35-44	45-54	55 and over	Total
0·000-0·004	1					1
0·005-0·009						
0·010-0·014		1	3			4
0·015-0·019		9	8	3		20
0·020-0·024	1	7	10	4		22
0·025-0·029	5	7	3	5		20
0·030-0·034	4	4	1	8	1	18
0·035-0·039	2	2	3	1	1	9
0·040-0·044	6	2	5	2	1	16
0·045-0·049	1	2	2	4	3	12
0·050-0·054	3				3	6
0·055-0·059	2			3	1	6
0·060-0·064				1	2	3
0·065-0·069	1			1	3	5
0·070-0·074	2				5	7
0·075-0·079		1		2	2	5
0·080-0·084	2				2	4
0·085-0·089					3	3
0·090-0·094	1				1	2
0·095-0·099					1	1
0·100-0·104	2				1	3
0·105-0·109					1	1
0·110-0·114				1		1
0·115-0·119	1				1	2
0·120-0·124						
0·125-0·129					1	1
0·130-0·134					1	1
0·135-0·139						
0·140-0·144					1	1
0·145 and over	1					1
Total	35	35	35	35	35	175
Unweighted mean of averages	0·054	0·028	0·027	0·041	0·076	

LXIX.—GUARDIANSHIP CHILDREN PER FAMILY OF TWO OR MORE PERSONS, BY AGE AND NATIVITY OF HEAD, CANADA, 1931

Age Group of Head	Nativity of Head				
	Canadian-Born	British-Born	United States-Born	European-Born	Elsewhere-Born
All ages	0·046	0·025	0·037	0·025	0·026
Under 25	0·053	0·020	0·047	0·038	0·046
25-34	0·027	0·013	0·028	0·015	0·023
35-44	0·028	0·042	0·026	0·015	0·016
45-54	0·042	0·042	0·032	0·020	0·023
55 and over	0·078	0·050	0·072	0·054	0·055

Going back to Statement LXVI, other dependents are most numerous in families with middle-aged and older heads. There is very little variation in the average number of other dependents in families with heads in the three age groups over 35. Accordingly the relationship

LXX.—SCATTER DIAGRAM SHOWING VARIATION IN AVERAGE NUMBER OF ADULT DEPENDENTS PER PRIVATE FAMILY OF TWO OR MORE PERSONS WITH AGE OF HEAD, BETWEEN THE RURAL AND URBAN-BY-SIZE-GROUP PARTS OF THE PROVINCES, CANADA, 1931

Average Number of Adult Dependents per Family	Age of Head					
	Under 25	25–34	35–44	45–54	55 and over	Total
0·000–0·004	3					3
0·005–0·009	1					1
0·010–0·014	4					4
0·015–0·019	10	3				13
0·020–0·024	3	6	1	1	5	16
0·025–0·029	4	5	5	3	5	22
0·030–0·034	4	5	3	7	3	22
0·035–0·039	2	5	4	1	3	15
0·040–0·044	2	5	2	3		12
0·045–0·049	1		4	2	1	8
0·050–0·054			2	2	3	7
0·055–0·059		1	4	2	1	8
0·060–0·064			2	1	1	4
0·065–0·069		2	2	4	1	9
0·070–0·074				1	4	5
0·075–0·079			2	2	4	8
0·080–0·084						
0·085–0·089		1				1
0·090–0·094				2	1	3
0·095–0·099			1		1	2
0·100–0·104		1	1			2
0·105–0·109				1		1
0·110–0·114	1		1		1	3
0·115–0·119		1		1	1	3
0·120–0·124				1		1
0·125–0·129						
0·130–0·134						
0·135–0·139						
0·140–0·144						
0·145–0·149						
0·150–0·154						
0·155–0·159						
0·160–0·164						
0·165–0·169						
0·170–0·174						
0·175–0·180						
0·180–0·184			1	1		2
Total	35	35	35	35	35	175
Unweighted mean of averages	0·025	0·040	0·057	0·060	0·054	

existing between number of dependents in the family and age of head differs greatly from that existing between number of guardianship children and age of head. It is the family heads at the extreme ages who support guardianship children but it is the middle-aged and older heads who assume the burden of supporting adult dependents. In any event, as we have already deduced from Statement LXV, the age of the head is not the prime factor in determining the number of adult dependents in the family as it is in the case of children. This is further substantiated by an examination of the above scatter diagram similar to that constructed for guardianship children. The unweighted mean of the averages for the various groups of families with heads in each age group is largest for the families with heads between 45 and 54 years of age but, again, the differences in the means for the three older age groups are very small. There is no definite connection between the number of adult dependents per family and the age of the head, except that the averages are generally slightly lower for families with heads 25-34 than for those with heads over 35 and considerably lower for families with heads under 25.

Bearing of Industrial Status of Family Head on Presence of Dependents.—The reluctance of the very young heads of families to undertake the support of adult dependents, despite the fact that their families are small, doubtless is the result of their financial status. That the family heads who most usually have adult dependents are those in the better occupational classes, in the economic sense, is evident from Statement LXXI.

LXXI.—AVERAGE NUMBERS OF GUARDIANSHIP CHILDREN AND ADULT DEPENDENTS IN NORMAL PRIVATE FAMILIES CLASSIFIED ACCORDING TO INDUSTRIAL STATUS OF HEAD, RURAL AND URBAN, CANADA, 1931

Industrial Status of Head	Guardianship Children per Family			Adult Dependents per Family		
	Total	Rural	Urban	Total	Rural	Urban
All classes	0·03	0·04	0·03	0·04	0·04	0·03
Employer	0·05	0·05	0·03	0·04	0·04	0·04
Own account	0·04	0·04	0·03	0·04	0·05	0·04
Wage-earner	0·03	0·03	0·02	0·03	0·03	0·03
No pay	0·01	0·01	–	0·01	0·01	–
Income	0·05	0·05	0·05	0·02	0·02	0·02
No occupation	0·05	0·06	0·04	0·02	0·02	0·02

Heads of families classed as employers and own-account workers have the largest average number of adult dependents, followed by wage-earning heads. The same order is observed in both the rural and urban families when they are separated. On the other hand, it is interesting to observe that heads of families living on income or with no occupation have a large average number of guardianship children living with them. It may be, however, that many of the guardianship children living in private families where the head has no occupation are there through the efforts of child-placing institutions and the money paid for their care provides a source of income for the family. In addition, many of the grandfathers whose grandchildren account for 25·39 p.c. of all guardianship children would probably live on income or have no occupation. The interesting thing is that, no matter in what way we subdivide the data, the families who are most likely to shelter adult dependents are quite different from those most likely to harbour guardianship children.

Dependents per Family and Earnings of Head.—This is further illustrated by the averages appearing in Statement LXXIII. The average number of guardianship children per family is largest for the families with married wage-earner heads whose annual earnings were from $50 to $449 and decreases almost steadily as we ascend the earnings scale. The high averages for the two upper earnings classes are not particularly significant since they include only a relatively small number of families. Despite their restricted income, the very poor families with heads earning less than $450 a year appear to most frequently take in orphaned and homeless

children. Of the 26,039 guardianship children living in normal families with wage-earner heads, 5,973 or 22·94 p.c. are found in families whose heads earned less than $450 during the preceding year. These families formed only 18·2 p.c. of the total number of families with heads stating earnings.

LXXII.—NUMBER OF PERSONS, OWN CHILDREN, GUARDIANSHIP CHILDREN AND ADULT DEPENDENTS PER NORMAL FAMILY WITH WAGE-EARNER HEAD, BY EARNINGS CLASS OF HEAD, CANADA, 1931

Earnings Class of Head	Average Number per Family			
	Persons	Own Children	Guardianship Children	Adult Dependents
All classes	4·23	2·17	0·025	0·031
No earnings	4·00	1·95	0·024	0·021
$ 1-$ 49	4·03	1·97	0·033	0·023
50- 449	4·31	2·25	0·032	0·023
450- 949	4·38	2·32	0·027	0·026
950- 1,449	4·26	2·20	0·024	0·030
1,450- 1,949	4·13	2·07	0·022	0·036
1,950- 2,949	4·01	1·95	0·020	0·042
2,950- 3,949	3·93	1·87	0·018	0·049
3,950- 4,949	3·90	1·83	0·016	0·057
4,950- 5,949	3·95	1·87	0·016	0·063
5,950 and over	3·98	1·91	0·019	0·054

Are we to conclude that the poor are most charitable to the poor? This might appear to be the obvious inference to be drawn from the given data but it cannot be made without qualifications. For example, many of the guardians are grandfathers, uncles or older brothers and these are generally above or below middle age. Consequently, they are not at the fittest ages in the economic sense and would be more liable to unemployment in a year of severe depression, such as 1930-31, than the average family head. There would, therefore, be a tendency for guardians to be thrown into the low-earnings classes. In addition, it will be seen that guardianship children are most numerous in localities where the earnings scale is low, *i.e.*, outside the large cities.

LXXIII.—GUARDIANSHIP CHILDREN PER NORMAL FAMILY WITH WAGE-EARNER HEAD, BY EARNINGS CLASS OF HEAD, CANADA, BY PROVINCES[5], 1931

Earnings Class of Head	Unweighted Mean of Averages	Average Number Guardianship Children per Family in							
		Nova Scotia	New Brunswick	Quebec[1]	Ontario[2]	Manitoba[3]	Saskatchewan	Alberta	British Columbia[4]
All classes	0·030	0·047	0·041	0·035	0·023	0·027	0·023	0·021	0·020
No earnings	0·036	0·064	0·037	0·036	0·024	0·042	0·030	0·024	0·028
$ 1-$ 49	0·034	0·067	0·013	0·055	0·026	0·033	0·027	0·034	0·014
50- 449	0·035	0·060	0·052	0·042	0·030	0·030	0·022	0·020	0·026
450- 949	0·030	0·048	0·042	0·036	0·024	0·029	0·022	0·019	0·023
950- 1,449	0·029	0·044	0·036	0·032	0·023	0·030	0·025	0·023	0·017
1,450- 1,949	0·025	0·032	0·029	0·031	0·021	0·022	0·022	0·021	0·018
1,950- 2,949	0·024	0·032	0·027	0·030	0·019	0·018	0·024	0·020	0·018
2,950- 3,949	0·018	0·029	0·017	0·020	0·019	0·017	0·017	0·013	0·013
3,950- 4,949	0·012	0·005	0·007	0·018	0·016	0·017	0·008	0·014	0·008
4,950- 5,949	0·019	0·030	-	0·024	0·015	-	0·014	0·024	0·044
5,950 and over	0·019	0·008	0·009	0·020	0·014	0·024	0·030	0·022	0·023

[1]Exclusive of Montreal.
[2]Exclusive of Toronto.
[3]Exclusive of Winnipeg.
[4]Exclusive of Vancouver.
[5]Prince Edward Island omitted because the numbers in some of the earnings classes are too small for an average to have any significance.

LXXIV.—SCATTER DIAGRAM SHOWING VARIATION IN AVERAGE NUMBER OF GUARDIANSHIP CHILDREN PER NORMAL FAMILY WITH WAGE-EARNER HEAD WITH EARNINGS OF HEAD, CANADA, BY PROVINCES,[1] 1931

Guardinnship Children per Family	Earnings Class											
	$ 0	$1-49	$50-449	$450-949	$950-1,449	$1,450-1,949	$1,950-2,949	$2,950-3,949	$3,950-4,949	$4,950-5,949	$5,950 and over	Totnl
0·000–0·001.....										2		2
0·002–0·003.....												
0·004–0·005.....									1			1
0·006–0·007.....									1			1
0·008–0·009.....									2		2	4
0·010–0·011.....												
0·012–0·013.....		1						2				3
0·014–0·015.....		1							1	2	1	5
0·016–0·017					1			3	2			6
0·018–0·019.....				1		1	3	1	1			7
0·020–0·021.....			1			2	1	1			1	6
0·022–0·023.....			1	2	2	2					2	9
0·024–0·025.....	2			1	1		1			2	1	8
0·026–0·027.....		2	1				1					4
0·028–0·029.....	1			1		1		1				4
0·030–0·031.....	1		2		1	1	1			1	1	8
0·032–0·033.....		1			1	1	1					4
0·034–0·035.....		1										1
0·036–0·037.....	2			1	1							4
0·038–0·039.....												
0·040–0·041.....												
0·042–0·043.....	1		1	1								3
0·044–0·045.....					1					1		2
0·046–0·047.....												
0·048–0·049.....				1								1
0·050–0·051.....												
0·052–0·053			1									1
0·054–0·055.....		1										1
0·056–0·057.....												
0·058–0·059												
0·060–0·061.....			1									1
0·062–0·063.....												
0·064–0·065.....	1											1
0·066–0·067		1										1
Total.....	8	8	8	8	8	8	8	8	8	8	8	88

[1]The averages are those for families in eight provinces. Prince Edward Island was not included on account of the smallness of its population. In calculating the provincial averages the cities of Montreal, Toronto, Winnipeg and Vancouver were omitted.

It is obvious from Statement LXXIII that the downward trend with increasing earnings of the heads in the number of guardianship children per family is typical of all the provinces. This is further illustrated by the scatter diagram following it. The averages for Prince Edward Island have been omitted, since the number of families in some of the earnings classes are so small

as to render them meaningless. The unweighted mean of the averages for the eight provinces agreed very closely with the weighted average for all Canada and for the sake of comparison they are repeated side by side.

LXXV.—WEIGHTED AVERAGES AND UNWEIGHTED MEAN OF AVERAGES OF NUMBER OF GUARDIANSHIP CHILDREN PER FAMILY, BY EARNINGS CLASS OF HEAD, CANADA, 1931

Earnings Class of Head	Guardianship Children per Family	
	Weighted Average	Unweighted Mean of Provincial Averages
No earnings	0·024	0·036
$ 1–$ 49	0·033	0·034
50– 449	0·032	0·035
450– 949	0·027	0·030
950– 1,449	0·024	0·029
1,450– 1,949	0·022	0·025
1,950– 2,949	0·020	0·024
2,950– 3,949	0·018	0·018
3,950– 4,949	0·016	0·012
4,950– 5,949	0·016	0·019
5,950 and over	0·019	0·019

The unweighted means are slightly higher than the weighted averages but the important thing is that they both follow the same trend. The smaller size of the weighted averages is doubtless due to the fact that they include the families in the four metropolitan centres, Montreal, Toronto, Winnipeg and Vancouver where, on the whole, there are fewer guardianship children than in the rest of the country. The large moving element in the populations of these cities probably accounts for the small number of guardianship children, since it has already been observed that guardianship children are less numerous in families with British-born or foreign-born heads than in the families of the native born.* It may be seen from Statement LXXIII that the tendency for the low-income families to harbour the maximum average number of guardianship children does not hold for these cities.

LXXVI.—GUARDIANSHIP CHILDREN PER NORMAL FAMILY WITH WAGE-EARNER HEAD, BY EARNINGS CLASS OF HEAD, MONTREAL, TORONTO, WINNIPEG AND VANCOUVER, 1931

Earnings Class of Head	Unweighted Mean of Averages	Montreal	Toronto	Winnipeg	Vancouver
All classes	0·017	0·021	0·015	0·017	0·014
No earnings	0·017	0·023	0·012	0·011	0·022
$ 1–$ 49	0·021	0·039	0·026	0·010	0·018
50– 449	0·016	0·021	0·015	0·015	0·011
450– 949	0·017	0·021	0·014	0·016	0·015
950– 1,449	0·018	0·021	0·016	0·018	0·015
1,450– 1,949	0·018	0·023	0·016	0·018	0·013
1,950– 2,949	0·015	0·017	0·014	0·017	0·012
2,950– 3,949	0·018	0·016	0·014	0·021	0·022
3,950– 4,949	0·018	0·015	0·018	0·018	0·021
4,950– 5,949	0·015	0·008	0·011	0·025	0·017
5,950 and over	0·020	0·018	0·014	0·018	0·031

It may seem peculiar that in the very large cities where family welfare is so closely associated with income there is no apparent relationship between the number of guardianship children per family and the earnings of the head. However, the number of guardianship children per family with head earning less than $950 compares favourably with the averages for families with heads earning $950 or more, and the fact that the averages are not higher in the low-income classes is possibly due to the extreme hardship incurred in supporting children on a very low income in the large cities.

*See Statement LXIX, page 81

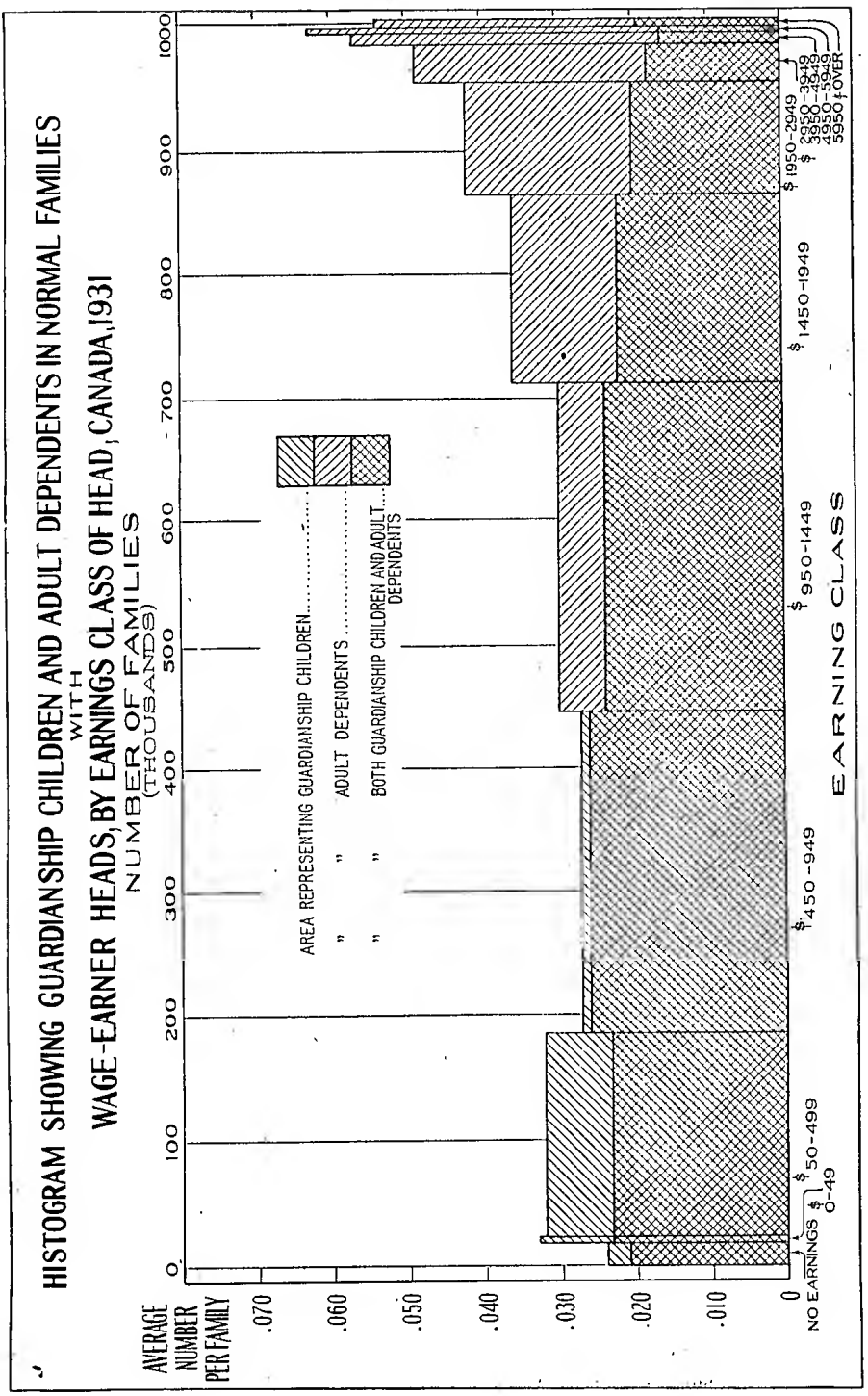
HISTOGRAM SHOWING GUARDIANSHIP CHILDREN AND ADULT DEPENDENTS IN NORMAL FAMILIES
WITH
WAGE-EARNER HEADS, BY EARNINGS CLASS OF HEAD, CANADA, 1931
NUMBER OF FAMILIES
(THOUSANDS)
AVERAGE NUMBER PER FAMILY
AREA REPRESENTING GUARDIANSHIP CHILDREN
" " ADULT DEPENDENTS
" " BOTH GUARDIANSHIP CHILDREN AND ADULT DEPENDENTS
NO EARNINGS
$ 1-49
$ 50-499
$ 450-949
$ 950-1449
$ 1450-1949
$ 1950-2949
$ 2950-3949
$ 3950-4949
$ 4950-5949
$ 5950 & OVER
EARNING CLASS

Chart 5

Directly opposed to the downward trend in the number of guardianship children per family with the earnings of the head is the upward trend in the number of adult dependents per family with earnings, as the reader may observe from Statement LXXII, page 84. The situation may be reviewed at a glance by means of the histogram on page 87. The abscissae represent the number of families with heads in the given earnings groups and the ordinates the average number of guardianship children or adult dependents, as the case may be. Consequently, the areas of the rectangles represent the actual number of guardianship children or adult dependents living in families with heads in each earnings class. A comparatively small number of families (28,052), who failed to state the earnings of the head, were disregarded in plotting the diagram. The reader's attention is directed to the fact that, in each case, the area representing the smaller of the two groups of dependents was superimposed on that representing the larger group.

Summary.—Throughout the previous pages we have been discussing guardianship children and adult dependents living in private families, in order to determine if they are instrumental in stabilizing the sizes of the families. Passing attention was paid to lodgers living in private households and it was recalled that the available data pointed to the fact that such lodgers prefer to lodge in households where there is plenty of accommodation, possibly due to the fact that the family is undersized. Guardianship children are most numerous in families with heads under 25 or over 55 years of age, *i.e.*, at the ages when either they have no children of their own or their children have left home. Therefore, guardianship children do very often fill the places of own children in the family. However, since only 67,952 or 2·81 p.c. of the 2,419,360 private families (and these are not all small families) include guardianship children at all, the addition of guardianship children brings only a limited number of families closer to the typical size. Adult dependents who do not generally contribute to any extent to the family income are usually found in families where the head is able to support them, *i.e.*, when he reaches his maximum earning power during middle age, but only if his family is small. If the family is large, even though the head's earnings be above average, there will not be enough money to go around and, moreover, the addition of an extra dependent will crowd still more a household already cramped for room. That there are many families where this happens was made apparent in Chapter IV when housing accommodation in relation to persons per household was dealt with for the city of Toronto.* It is probable, however, that adult dependents are most common to undersized families so that they do stabilize family size to some extent.

LXXVII.—PERCENTAGES OF PRIVATE FAMILIES WITH AND WITHOUT OWN CHILDREN, HAVING OTHER DEPENDENTS, BY CONJUGAL CONDITION OF HEAD, CANADA, 1931

Locality	Total		Single		Married, Husband and Wife Living Together		Married, Husband or Wife Absent		Widowed		Divorced	
	Families with Own Children	Families without Own Children	Families with Own Children	Families without Own Children	Families with Own Children	Families without Own Children	Families with Own Children	Families without Own Children	Families with Own Children	Families without Own Children	Families with Own Children	Families without Own Children
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
CANADA	5·54	9·25	2·27	13·36	5·44	7·84	4·41	6·10	6·66	10·13	3·79	6·14
Rural	6·31	10·19	2·18	12·38	6·20	9·56	4·45	5·60	7·81	10·00	5·06	6·32
Urban—												
Over 30,000.	4·60	7·57	2·99	14·16	4·51	5·65	4·08	6·88	5·31	9·81	3·78	5·07
1,000-30,000	5·32	9·66	2·08	17·34	5·16	7·84	4·89	6·78	6·60	10·78	1·77	7·97
Under 1,000.	5·34	9·25	–	11·21	5·13	8·87	4·36	4·56	7·13	9·92	2·35	6·14

For every group of families listed in Statement LXXVII, heads without children of their own support guardianship children more frequently than heads with children. It is, of course, true that many of the single, widowed and divorced heads without own children would not be heads of families at all if they did not have to support dependents so that, in some cases, dependents tend to create small extraneous families. Consequently, when we say that dependents other than own children tend to lessen the dispersion in the sizes of families, we refer to normal families and other types which would exist as families without the dependents.

*See Statement XXXIII, page 54.

CHAPTER VIII

THE CENSUS FAMILY AND THE COMPLETED FAMILY

Introduction.—The following instructions given to enumerators at the time of the census deal with the reporting of the children.

"While it is not possible to lay down a rule applicable to every case, the following persons should generally be included as members of the family:—

"(a) Members of the family temporarily absent on the census day, either in foreign countries or elsewhere in Canada on business or visiting. (But a son or a daughter permanently located elsewhere, or regularly employed elsewhere and not sleeping at home should not be included with the family.)

"(b) Members of the family attending schools or colleges located in other districts. (But a student nurse who receives even a nominal salary should be enumerated where she is in training.)

"(c) Members of the family who are ill in hospitals or sanitariums and whose period of absence is more or less known."

The census measures only the size of the family living at home, an entirely different concept from the size of the completed biological family. And yet, as a proof that Canadians are rapidly becoming a non-fertile race, people are prone to compare the average size of the *census* family with their grandparents' family of 10. There is no doubt that families are smaller now than they were two generations ago, but such comparisons wildly exaggerate the differences.

LXXVIII.—PERCENTAGE DISTRIBUTION OF HEADS OF NORMAL PRIVATE FAMILIES AND AVERAGE NUMBER OF CHILDREN PER FAMILY, BY AGE GROUP, CANADA, 1931

Age Group of Head	P.C. of Heads	Average No. Own Children per Family
Total	100·00	2·27
Under 25	3·16	0·80
25–34	20·07	1·74
35–44	26·41	2·91
45–54	23·70	2·97
55 and over	26·65	1·59

From the second column of the above statement it is obvious that the average size of the family with head under 35 years of age is small because the family is not yet complete, while it is also small for heads over 55 because the children have left home.

Estimate of Sizes of Completed Families.—The determination of the average size of the completed family is a difficult statistical problem. It is obvious that only the sizes of those families already completed, *i.e.*, those born to women who have passed the child-bearing period, can be obtained by enumeration; and only those mothers still living, by no means a representative sample, can be enumerated. It is not possible to determine by enumeration the sizes of completed families for active women and it is the active women in which interest chiefly centres. Consequently, a predictable size distribution of completed families for active women must be *estimated* from the data available. This has been done by using the statement on births according to order for the mothers of 1931 contained in the Annual Report on Vital Statistics for the year. For purposes of reference, this statement has been reprinted as Table 14, Part II, page 200. The steps taken in arriving at an estimate are given in detail in the following pages.

LXXIX.—BIRTHS PER MILLION WOMEN ACCORDING TO ORDER OF BIRTH, BY AGE GROUP, CANADA, 1931

Order of Birth of Child	All Ages	Births to Mothers in Age Group						
		15–19	20–24	25–29	30–34	35–39	40–44	45–49
All births	639,229	25,123	133,832	176,076	147,579	105,442	45,601	5,576
1st birth	132,167	18,789	56,429	36,783	14,113	4,802	1,148	103
2nd "	114,989	5,308	41,141	39,845	19,448	7,419	1,718	110
3rd "	87,535	891	21,812	32,891	20,008	9,516	2,174	243
4th "	68,138	121	9,523	25,814	19,445	10,191	2,809	235
5th "	53,255	14	3,481	18,083	17,823	10,249	3,305	300
6th "	42,004	-	1,022	11,328	15,762	10,255	3,352	285
7th "	35,159	-	275	6,404	14,110	10,489	3,520	361
8th "	28,352	-	89	3,065	10,910	9,945	3,929	414
9th "	21,597	-	34	1,128	7,168	9,033	3,835	399
10th "	17,049	-	22	482	4,317	7,693	4,000	535
11th "	12,312	-	4	149	2,425	5,513	3,735	486
12th "	9,571	-	-	61	1,199	4,222	3,580	509
13th "	6,314	-	-	35	532	2,720	2,651	376
14th "	4,399	-	-	3	168	1,675	2,158	395
15th "	2,731	-	-	5	88	821	1,540	277
16th "	1,594	-	-	-	29	456	889	220
17th "	884	-	-	-	15	213	557	99
18th "	574	-	-	-	10	146	315	103
19th "	279	-	-	-	3	36	168	72
20th "	169	-	-	-	6	33	111	19
21st "	72	-	-	-	-	6	47	19
22nd "	54	-	-	-	-	9	37	8
23rd "	17	-	-	-	-	-	13	4
24th and over	14	-	-	-	-	-	10	4

In Statement LXXIX the births per million women in each five-year age group are classified by order as first, second, third, fourth, etc. Interest lies in this statement as a probability table, the births per million in each square being the probability that a woman in a given age group will bear a child of a given order during the year. Let us apply the probabilities to the life history of the average Canadian woman living through the child-bearing period. The row for first births gives the probabilities of her having a first birth during any one year while she is in each five-year age group. Since she can have a first birth only once, the probabilities are mutually exclusive and the probability of her having a first birth at all is the sum of the probabilities for each five-year age group multiplied by 5. The necessity of multiplying by 5 arises from the fact that, while the probabilities given for each age group measure the woman's chances of having a first birth during one year, she is five years in each age group. The operation of multiplying by 5 has not been carried out in Statements LXXIX and LXXX since in the subsequent calculations the 5's cancel. The probabilities of a woman having second, third, fourth, etc., children during her child-bearing period are calculated in the same way as the probability of having a first child.

In Statement LXXX the births to mothers in each age group as shown in Statement LXXIX are multiplied by the proportions of women alive at exact age 15 who are alive in the age groups. The proportions, taken from the *Canadian Life Tables*, 1931, are given below:—

Number of women alive at exact age 15	1·00000
Average number of survivors at—	
15–19 years of age	0·99454
20–24 years of age	0·98054
25–29 years of age	0·96310
30–34 years of age	0·94414
35–39 years of age	0·92344
40–44 years of age	0·90020
45–49 years of age	0·87315

LXXX.—ESTIMATED BIRTHS PER MILLION WOMEN AT EXACT AGE 15, DURING SUBSEQUENT FIVE-YEAR INTERVALS OF CHILD-BEARING PERIOD, BASED ON BIRTHS IN CANADA, 1931

Order of Birth of Child	All Ages	Births to Mothers in Age Group (per million women at exact age 15)						
		15–19	20–24	25–29	30–34	35–39	40–44	45–49
1st birth	128,325	18,686	55,331	35,426	13,325	4,434	1,033	90
2nd "	110,850	5,279	40,340	38,375	18,362	6,851	1,547	96
3rd "	83,797	886	21,388	31,677	18,890	8,787	1,957	212
4th "	64,823	120	9,338	24,861	18,359	9,411	2,529	205
5th "	50,371	14	3,413	17,416	16,827	9,464	2,975	262
6th "	39,530	–	1,002	10,010	14,882	9,470	3,017	249
7th "	32,930	–	270	6,168	13,322	9,686	3,169	315
8th "	26,422	–	87	2,952	10,301	9,184	3,537	361
9th "	20,028	–	33	1,086	6,768	8,341	3,452	348
10th "	15,734	–	22	464	4,076	7,104	3,601	467
11th "	11,315	–	4	144	2,290	5,091	3,362	424
12th "	8,757	–	–	59	1,132	3,899	3,223	444
13th "	5,762	–	–	34	502	2,512	2,386	328
14th "	3,997	–	–	3	159	1,547	1,943	345
15th "	2,474	–	–	5	83	758	1,386	242
16th "	1,440	–	–	–	27	421	800	192
17th "	798	–	–	–	14	197	501	86
18th "	518	–	–	–	9	135	284	90
19th "	250	–	–	–	3	33	151	63
20th "	153	–	–	–	6	30	100	17
21st "	65	–	–	–	–	6	42	17
22nd "	48	–	–	–	–	8	33	7
23rd "	15	–	–	–	–	–	12	3
24th and over	12	–	–	–	–	–	9	3

We wish to arrive at the completed sizes of families. All mothers who have children must bear a first child so that the total probability of having a first child coincides with the number of families with children. The difference between the probability of having a first child and that of having a second child gives the probability of having only 1 child; similarly the differences for second and third children give the probability of having only 2 children. This process of differencing has been carried out below.

LXXXI.—DIFFERENCES IN BIRTHS OF SUCCESSIVE ORDERS, CANADA, 1931

Order of Birth	For All Women at Age 15		For Women Who Live Through Child-Bearing Period	
	Number of Births (1)	Difference (2)	Number of Births (3)	Difference (4)
1st birth	128,325	17,475	132,167	17,178
2nd "	110,850	27,053	114,989	27,454
3rd "	83,797	18,074	87,535	19,397
4th "	64,823	14,452	68,138	14,883
5th "	50,731	10,841	53,255	11,251
6th "	39,530	6,600	42,004	6,845
7th "	32,930	6,508	35,159	6,807
8th "	26,422	6,394	28,352	6,755
9th "	20,028	4,294	21,597	4,548
10th "	15,734	4,419	17,049	4,737
11th "	11,315	2,558	12,312	2,741
12th "	8,757	2,995	9,571	3,257
13th "	5,762	1,765	6,314	1,915
14th "	3,997	1,523	4,399	1,668
15th "	2,474	1,034	2,731	1,137
16th "	1,440	642	1,594	710
17th "	798	280	884	310
18th "	518	268	574	295
19th "	250	97	279	110
20th "	153	88	169	97
21st "	65	17	72	18
22nd "	48	33	54	37
23rd "	15	3	17	3
24th and over	12	12	14	14

Graduation.—It will be noted on examination of columns 2 and 4 of Statement LXXXI that there are more families of 10 than families of 9 and more families of 12 than families of 11. This is obviously due to careless reporting and to the tendency to state even numbers in preference to odd numbers. Consequently, it has been necessary to graduate the numbers of large families. It was considered unwise to carry the graduation lower than for the number of mothers bearing 8 children. Results of the graduation may be seen in Statements LXXXII (a) and (b) where a consistent tendency to report even orders of birth in preference to the odd orders will be noted

LXXXII.—GRADUATION OF NUMBERS OF FAMILIES OF LARGE SIZES FOR (A) WOMEN AT EXACT AGE 15 AND (B) ALL WOMEN LIVING THROUGH THE CHILD-BEARING PERIOD, CANADA, 1931

Children per Family	Mothers Bearing Given Number of Children		Mothers out of 100,000 Bearing Given Number of Children	Distribution for	
	As Estimated in Statement LXXXI	Graduation		All Women	Married, Widowed or Divorced Women
(A) FOR WOMEN AT EXACT AGE 15					
Total	128,325	-	100,000	10,000	-
0	-	-	-	2,775	-
1	17,475	17,475	13,618	984	-
2	27,053	27,053	21,083	1,524	-
3	18,974	18,974	14,786	1,069	-
4	14,452	14,452	11,262	814	-
5	10,841	10,841	8,448	610	-
6	6,600	6,600	5,143	372	-
7	6,508	6,508	5,071	366	-
8	6,394	5,865	4,598	332	-
9	4,294	5,016	3,932	284	-
10	4,419	3,691	2,893	209	-
11	2,558	3,265	2,559	185	-
12	2,995	2,428	1,903	137	-
13	1,765	2,098	1,645	119	-
14	1,523	1,388	1,088	79	-
15	1,034	1,069	838	60	-
16	642	609	477	34	-
17	280	351	275	20	-
18	268	197	154	11	-
19	97	144	113	8	-
20 and over	153	145	114	8	-
(B) FOR ALL WOMEN LIVING THROUGH CHILD-BEARING PERIOD					
Total	132,167	-	100,000	10,000	10,000
0	-	-	-	2,565	1,712
1	17,178	17,178	12,997	966	1,077
2	27,454	27,454	20,772	1,545	1,722
3	19,397	19,397	14,676	1,091	1,217
4	14,883	14,883	11,261	837	933
5	11,251	11,251	8,513	633	706
6	6,845	6,845	5,179	385	429
7	6,807	6,807	5,150	383	427
8	6,755	6,181[1]	4,705	350	390
9	4,548	5,331[1]	4,058	302	336
10	4,737	3,942[1]	3,001	223	249
11	2,741	3,518[1]	2,678	199	222
12	3,257	2,629[1]	2,001	149	166
13	1,915	2,286[1]	1,740	129	144
14	1,668	1,517[1]	1,155	86	96
15	1,137	1,177[1]	896	67	74
16	710	673[1]	512	38	42
17	310	388[1]	295	22	24
18	295	218[1]	166	12	14
19	110	160[1]	122	9	10
20 and over	169	162	123	9	10

Graduation formula: $y = \frac{-3y_{-2} + 12y_{-1} + 17y_0 + 12y_1 - 3y_2}{35}$

[1]Difference in total mothers for crude and graduated data distributed in the third column.

Childless Women.—The proportion of women bearing no children will be the proportion not having a first birth. Therefore, according to Statement LXXIX, of 1,000,000 women living through the child-bearing period 1,000,000 − 5 × 132,167 or 339,165 will be childless, and similarly from Statement LXXX, of 1,000,000 women alive at exact age 15, 1,000,000 − 5 × 128,325 or 358,375 will be childless. Since these proportations seemed ridiculously high, the proportions of women childless given in the above statement were calculated by a refined method. It should be pointed out that by correcting the estimate of the proportions of women childless we automatically correct the estimates of the proportions of mothers bearing families of each size. The method of calculating the proportion of women childless will now be discussed in detail.

1931 as a Representative Year.—Our whole method depends on the birth orders in 1931 being representative of the birth orders for all years. No one year, however, will be perfectly representative since fertility is constantly changing and the first births in particular are very sensitive to the marriage rate of the previous year.

LXXXIII.—RATES OF FIRST BIRTHS AND MARRIAGES PER 1,000 POPULATION, CANADA AND QUEBEC, 1927-1932

Year	First Births per 1,000 Population in		Marriages per 1,000 Population in	
	Canada	Quebec	Canada	Quebec
1927	5·15	5·11	7·3	7·0
1928	5·30	5·22	7·6	7·0
1929	5·42	5·18	7·7	7·1
1930	5·66	5·49	7·0	6·6
1931	5·34	5·08	6·4	5·8
1932	5·09	4·69	6·0	5·2

It is obvious from the above statement that the first-birth rate for Canada as a whole increased rapidly from 1927 to 1930, probably due to the high marriage rate concomitant with the economic prosperity of the period but fell off with even greater rapidity in 1931 and 1932 due to the depression. Fortunately, 1931 seems to represent a mean between the two extremes. When the province of Quebec is considered separately, the 1931 figures are found to be lower than for any of the immediately preceding years possibly due to the decreasing marriage rate and because the first births for any one year are more closely connected with the marriages of the preceding year for Quebec than for the other provinces. Incidentally, it is interesting to note that the high percentage of large families in Quebec for 1931 is due not only to the abundance of large families but the scarcity of small new families. To overcome the difficulty presented by the fact that 1931 was a year abnormally low for first births in the province of Quebec it was decided to omit the Quebec figures in the estimate and assume that the percentage of women childless derived for the remaining eight provinces could ordinarily be applied to Quebec as well.

Corrections.—It was necessary to make several additions to the number of first births appearing in the vital statistics.

(1) When a mother bears twins first, both births are compiled in the Vital Statistics Annual Report as second births. Sufficient first births to compensate for the resulting discrepancy were, therefore added on the basis of a special compilation made in 1930 of the order of births of twins and triplets.

(2) There were 8,365 illegitimate births in Canada in 1931. This estimate only applies to the proportion of women bearing legitimate children. It is important, however, that many of the mothers of illegitimate children probably marry later and bear legitimate children. These may or may not report their first legitimate child as their first offspring. If they do not they will not be included in our estimate of the married women bearing children. In correcting for this source of error three arbitrary assumptions were made: (i) that one-half the illegitimate births are first births; (ii) that one-half the women bearing illegitimate children marry and bear legitimate children at a later date; (iii) that one-half of these do not report their first legitimate child as their first offspring. On the basis of these assumptions it is apparent that our correction may be effected by adding one-eighth of the illegitimate births to the number of first births.

(3) It was estimated that only 96 p.c. of all births were registered in 1931 and, assuming the same inadequacy applied to first births alone, the first births at each age were multiplied by the fraction $\frac{100}{96}$.

The Proportion of All Women Bearing Children.—Statement LXXXIV gives the first-birth rate per 10,000 women derived from the Annual Report on Vital Statistics on the order of births after applying the corrections mentioned above. Column 2 gives the probable number of women out of 10,000 who will bear a child by the time they reach a given exact age.

LXXXIV.—FIRST BIRTHS PER 10,000 WOMEN, BY AGE GROUP, CANADA[1], 1931

Age Group	(1) First Births per 10,000 Women	At Exact Age	(2) Cumulative First Births per 10,000 Women
Under 15	1	15	1
15	13	16	14
16	59	17	73
17	180	18	253
18	383	19	636
19	549	20	1,185
20-24	627	25	4,320
25-29	404	30	6,340
30-34	154	35	7,110
35-39	53	40	7,375
40-44	11	45	7,430
45-49	1	50	7,435

[1]Exclusive of the province of Quebec.

Consequently, of 10,000 women living through the child-bearing period, 2,565 bear no children. Since, of 10,000 women between the ages of 45 and 49 in 1931, 1,029 were single, women who do not marry account for a large share of the childless women. Out of the 8,971 (10,000 − 1,029) women who do marry before the end of the child-bearing period, 1,536 (2,565 − 1,029) or 17·12 p.c. are childless. This corresponds roughly with the percentage of marriages which are sterile, although it does not allow for marriages contracted late in the child-bearing period, or prematurely terminated by death, separation or divorce.

Sterility in England and the United States.—The above detailed explanation of the method of deriving the percentage of childless women has been given in order that the reader may realize the difficulties encountered in making an estimate from the material available, and that he may judge its limitations for himself. For the sake of interest a comparison has been made with figures derived for the sterility of marriage in other countries. An intensive study of the fertility of marriage was made at the time of the 1911 English Census* when the following questions appeared on the householder's schedule:—

State, for each married woman entered on this schedule, the number of

Completed years the present marriage has lasted. If less than one year, write "Under one."	Children born alive to present marriage (if no children born alive, write "None" in Column 7)		
	Total Children Born Alive	Children Still Living	Children Who have Died

Of the marriages of completed fertility, 16·2 p.c. were sterile. Since these included wives aged from 45 upwards, by arranging the marriages according to the wife's age at marriage it was possible to compare the fertility of the marriages solemnized at different periods from before 1851. It was found that sterility was increasing except in the group of women married between the ages of 15 and 19, where there was a considerable decrease. Since early marriages were becoming less frequent the decrease may be attributed to the probability that, for a growing percentage of the early marriages, fertility was assured beforehand. If sterile marriages were increasing during the latter part of the nineteenth century due to delayed marriages, the use of contraceptive methods and the development of a society in which the instinct for reproduction seems to decline, it is safe to assume that the increase has been continued into the twentieth century, characterized as it is by the growth of a more and more highly competitive society, the practice of birth control, and a declining birth rate. Consequently, one would expect the percentage of sterile marriages to be much higher in England in 1931 than it was in 1911.

Questions similar to those asked in the English Census appeared in the United States Census of 1910.

*See Vol. XIII, Census of England and Wales, 1911.

The mass data was never compiled but a special compilation for a small sample by the Millbank Memorial Fund gave approximately 9 p.c. of the rural marriages and 16 p.c. of the urban marriages as sterile. That there has been a marked increase during the past 21 years is extremely probable.

Distribution of Women According to Number of Children Borne.—In the last column of Statement LXXXII (a), page 92, the number per 10,000 women at age 15 who will be childless has been inserted. It was, of course, necessary in this case to allow for death by multiplying the number of first births in each age group by the probability of being alive. The 7,225 mothers were then distributed according to the number of children they would bear on the basis of the distribution in the preceding column.

In the fourth column of Statement LXXXII (b) a similar distribution was given for women living through the child-bearing period. The fifth column contains the size distribution of completed families for women living through the child-bearing period and marrying before its close. As has already been pointed out, no allowance is made for marriages terminated before the end of the child-bearing period by death, divorce or separation. In Statement LXXXV the number of children in completed families of each size is given. The average number of children per completed family is 4·01 while the median family contains 2·90 children. The median child comes from a completed family of 7·19 children. Only 2·68 p.c. of all children whose parents live through the child-bearing period belong to families of 1 child; 67·64 p.c. come from families with less than 10 children so that approximately one child out of three belongs to a family of 10 or more children. The modal family consists of 2 children, and the modal child comes from a family of 4. The average number of children in completed families with children is 4·85.

LXXXV.—ESTIMATED DISTRIBUTION OF COMPLETED FAMILIES PER 10,000 WOMEN LIVING THROUGH THE CHILD-BEARING PERIOD AND MARRYING BEFORE ITS CLOSE, NUMBER OF CHILDREN AND CUMULATIVE NUMBER PER 10,000, BY NUMBER OF CHILDREN PER COMPLETED FAMILY, CANADA, 1931

Children per Family	Families	Children	Children per 10,000 (cumulative)
Total	10,000	40,125	10,000
0	1,712	–	–
1	1,077	1,077	268
2	1,722	3,444	1,127
3	1,217	3,651	2,037
4	933	3,732	2,967
5	706	3,530	3,846
6	429	2,574	4,488
7	427	2,989	5,233
8	390	3,120	6,010
9	336	3,024	6,764
10	249	2,490	7,385
11	222	2,442	7,993
12	166	1,992	8,490
13	144	1,872	8,956
14	96	1,344	9,291
15	74	1,110	9,568
16	42	672	9,735
17	24	408	9,837
18	14	252	9,900
19	10	190	9,947
20 and over	10	212	10,000

Average children per completed family	4·01
Median children per family	2·90
Size of family containing median child	7·19

It appears that completed Canadian families are larger than they are generally thought to be. The large percentage of children who come from completed families of 10 or more children is most striking. The question will be raised as to whether the estimate grossly exaggerates the proportions of large families. The sizes of completed families will naturally be raised by the inclusion of stillbirths. In the depression year of 1931 the birth rate was undoubtedly affected. It has already been seen that the number of first births was influenced by the drop in the marriage rate during the preceding year. The births of lower orders (second, third, etc.) were probably

much more sensitive to the restrictive effect of the depression than were those of higher orders since the districts to which large families are common are mostly self-contained farming communities where economic conditions should have little effect on the birth rate. It is unlikely, however, that the results of the estimate would be greatly changed if it were possible to correct for these factors.

According to a very rough estimate, the average Canadian woman living through the child-bearing period and marrying before its close should bear 2·83 children to replace herself, her husband, and their contemporaries who do not marry or who die before reaching the end of the child-bearing period. Actually she bears 4·01 children so that, taking the length of a generation to be 28·38 years (the median age of mothers in 1931), we can calculate an annual rate of population increase per 1,000 as follows:—

$$\text{Rate} = \frac{4\cdot01 - 2\cdot83}{2\cdot83} \times \frac{1{,}000}{28\cdot38} = 14\cdot7.$$

Some 45·11 p.c. of families (which on completion will contain 0—2 children) fall below the maintenance level, the remaining 55 p.c. must make up for these families and provide any natural increase. Again, the average size of families with 0—8 children is only 2·80; therefore, it is evident that if there were no families of 9 or more children there would be no natural increase in population. It may be said, therefore, that 13·9 p.c. of our families, *viz.*, those consisting of 9 or more children on completion, account for the natural increase in our population. Elimination of these large families would result in cessation of population growth.

Comparison of Sizes of Census Families and Completed Families.—The average sizes of the normal private family and the completed family were respectively, 2·32 and 4·01 so that the latter was 1·73 times as large as the former. In comparing the size distributions of census families and completed families, it must be remembered that while the latter distribution applies only to women who are still active, census families include married women at all ages.

LXXXVI.—DISTRIBUTION PER 10,000 COMPLETED FAMILIES AND CENSUS FAMILIES ACCORDING TO NUMBER OF CHILDREN PER FAMILY, CANADA, 1931

Children per Family	(1) Completed Families.	(2) Census Families	(3) Difference in Distribution (col. 1-col. 2)	(4) Cumulative Difference in Distribution	(5) Average Size of Completed Family for Census Family of Given Size	(6) Average Number of Children Absent from Census Family	(7) Census Family as P.C. of Completed Family
Total	10,000	10,000	-	-	-	-	-
0	1,712	2,396	— 684	684	0·74	0·74	-
1	1,077	2,106	—1,029	1,713	2·59	1·59	38·7
2	1,722	1,811	— 89	1,802	3·58	1·58	55·9
3	1,217	1,268	— 51	1,853	5·09	2·09	58·9
4	933	855	78	1,775	6·47	2·47	61·9
5	706	568	138	1,637	7·76	2·76	64·4
6	429	380	49	1,588	8·95	2·95	67·0
7	427	252	175	1,413	9·75	2·75	71·8
8	390	161	229	1,184	10·58	2·58	75·6
9	336	98	238	946	11·43	2·43	78·7
10	249	55	194	752	12·29	2·29	81·4
11	222	29	193	559	13·05	2·05	84·3
12	166	13	153	406	13·87	1·87	86·5
13	144	5	139	267	14·63	1·63	88·9
14	96	2	94	173	15·51	1·51	90·3
15	74	1	73	100	16·35	1·35	91·8
16	42	-	42	58	-	-	-
17	24	-	24	34	-	-	-
18	14	-	14	20	-	-	-
19	10	-	10	10	-	-	-
20	4	-	4	6	-	-	-
21	3	-	3	3	-	-	-
22	2	-	2	1	-	-	-
23 and over	1	-	1	-	-	-	-

"Own" children compiled in the private family tables of Volume V of the census include only those children born to the heads of the family, adopted and guardianship children being listed separately. Since only the former are dealt with in this chapter, each of the census families considered must be derived from an equally large or larger completed biological family.

Columns 1 and 2 of Statement LXXXVI give the proportions of completed biological families and census families of each size. There were no census families with more than 18 children and the families out of 10,000 with 16, 17 and 18 children represented so small a fraction that they may be ignored.

Statement LXXXVI gives one census family of 15 children which must have been derived from:—

74	completed	families	with	15	children
42	"	"	"	16	"
24	"	"	"	17	"
14	"	"	"	18	"
10	"	"	"	19	"
4	"	"	"	20	"
3	"	"	"	21	"
2	"	"	"	22	"
1	"	"	"	25	" (considering the average size of the families with 23 or more children to be 25).

The average size of these 39 families is 16·35, so that the census family of 15 is derived from a completed family of 16·35.

Similarly the 2 census families with 14 children are derived from 96 completed families with 14 children and 73 completed families with 16·35 children, the latter being the remaining completed families with 15 or more children after 1 is deducted to account for the 1 census family of 15. The census family of 14, therefore, is derived from a completed family of average size 15·51.

Take, for example, the census family with 8 children: the number in a sample of 10,000 families is 161 (column 2); these are derived from 390 completed families with 8 children (column 1) and 238 completed families of average size 11·43 (column 4) giving 10·58 as the average number of children in the completed family whence it is derived.

In column 6 the average number of children who have left home, died or are not yet born has been given for census families of each size. It might be well to point out that stillbirths are included in the sizes of completed families. In column 7 the size of the census family has been divided by the average size of the completed family whence it is derived. In census families with 1 child only 38·7 p.c. of the children are at home while in census families with 15 children, 91·8 p.c. of the children are at home. The percentage of children at home rises steadily with the size of the census family. The heads of the very large census families are generally at the age of maximum family responsibility; their family is complete biologically and the children have not yet left home. That the large census families are those where the children stay at home until they reach a considerable age would seem evident from Statement LXXXVII.

LXXXVII.—MEDIAN AGE OF CHILDREN IN CENSUS FAMILIES, BY SIZE, CANADA, 1931

Children in Family	Median Age of Children in Families	Children in Family	Median Age of Children in Families
	years		years
1	9·2	9	11·2
2	9·9	10	11·4
3	10·6	11	11·4
4	10·8	12	11·6
5	11·0	13	11·8
6	11·0	14	11·9
7	11·0	15	12·0
8	11·1		

The median age of children rises steadily with the size of the family. In the average census family of 15, 7 are above 12 years of age. Allowing an interval of only one year between births, the oldest child living at home will be over 19 years of age. The circumstances necessary to produce an extremely large census family are: first, the heads must have been married fairly young and be well along in the child-bearing period when the family is reported; secondly, they must be prolific; thirdly, their children must remain living at home.

LXXXVIII.—ESTIMATED CROSS-CLASSIFICATION OF 10,000 CENSUS FAMILIES AND COMPLETED FAMILIES ACCORDING TO SIZE, CANADA, 1931

Children per Census Family	Children per Completed Family																
	All Sizes	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 and over
All sizes	10,000	1,712	1,077	1,722	1,217	933	706	429	427	390	336	249	222	166	144	96	174
0	2,396	1,712	264	205	85	44	26	13	11	9	7	5	4	3	3	2	3
1	2,106	–	813	632	262	138	79	39	33	27	22	15	13	10	8	5	10
2	1,811	–	–	885	367	193	110	54	47	38	30	22	19	13	11	8	14
3	1,268	–	–	–	503	263	151	75	64	53	42	29	25	18	16	10	19
4	855	–	–	–	–	295	169	83	71	59	47	33	28	20	18	11	21
5	568	–	–	–	–	–	171	84	73	59	47	33	29	21	18	12	21
6	380	–	–	–	–	–	–	81	70	57	45	32	27	20	17	11	20
7	252	–	–	–	–	–	–	–	58	48	38	27	23	17	14	10	17
8	161	–	–	–	–	–	–	–	–	40	32	22	19	14	12	8	14
9	98	–	–	–	–	–	–	–	–	–	26	18	15	11	10	6	12
10	55	–	–	–	–	–	–	–	–	–	–	13	12	9	7	5	9
11	29	–	–	–	–	–	–	–	–	–	–	–	8	6	5	4	6
12	13	–	–	–	–	–	–	–	–	–	–	–	–	4	3	2	4
13	5	–	–	–	–	–	–	–	–	–	–	–	–	–	2	1	2
14	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
15	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1

Statement LXXXVIII gives an estimated cross-classification of census families and completed families according to size. The distribution was built up in the following manner from the data given in columns 1 and 2 of Statement LXXXVI. It was first necessary to assume that the chances of a census family of given size being derived from completed families of the same size or each greater size were proportional to the numbers of completed families of those sizes minus the families already deducted to account for larger census families. Thus:—

The 1 census family of 15 was derived from 1 of the 174 completed families having 15 or more children.

The 2 census families of 14 were derived from the 96 completed families of 14 and the the 173 (174 - 1) completed families of 15 or more children, *i.e.*, it was derived from $2 \times \frac{96}{96 + 173} = 1$ (approx.) families of 14 and $2 \times \frac{173}{96 + 173} = 1$ (approx.) families of 15.

The 5 census families of 13 were derived from the 144 completed families of 13 and 267 completed families of 14 or more children, *i.e.*, they were derived from $5 \times \frac{144}{144 + 267} = 2$ (approx.) families of 13 and $5 \times \frac{267}{144 + 267} = 3$ (approx.) families of 14 or more.

Though constructed on an arbitrary basis, the above two-way frequency distribution enables us to visualize the correlation between the size of the census family and the size of the completed family. It will be seen, for example, that while there is only 1 chance out of 174 that the family, which on completion consists of 15 or more children, will be reported to consist of 15 children at the time of the census, there are 3 chances that it will be reported childless. This illustrates the difficulty of studying fertility from census family data.

Concluding Remarks.—Two factors complicate the calculation of the size distribution of completed families from the birth orders for any one year, *viz.*, changing age distribution of active women and fluctuating birth rates. The first difficulty was overcome, since our method involved the computation of birth rates based on the age distribution of women, obtained from the census. It was quite impossible to adequately correct for fluctuating birth rates. Fortunately, 1931 appeared to be a much more representative year than other years of the same period since, while the stimulating effects of the boom period had disappeared, the influence of the depression on the birth rate was at that time only partially felt. In general, 1931 has been found to be a fairly representative year when dealing with social phenomena which, although sensitive to the business cycle, tend to lag behind it considerably. For this reason no resort was made to the actuarial practice of averaging rates for 3 years instead of taking them for a single year.

CHAPTER IX

OCCUPATIONS AND EARNINGS OF FAMILY HEADS

Introduction.—This chapter is a summary and partial interpretation of the data compiled from the returns of the 1931 Census relating family size and composition to the occupation and earnings of heads. Attention is confined principally to what have been termed "normal" families with husband and wife both alive and living together. In Chapter VI it was stated that 86 p.c. of all families came under this class. Since information was not available with regard to the earnings of non-wage-earners, only the families of wage-earners are dealt with. Consequently, we must leave out such important occupational classes as independent farmers, workmen and tradesmen on their own account, private business men, professional men not on salary, and men living on income, but it is important to bear in mind when observing the data in the statements of this chapter, that in some occupations, the wage-earner derives only part of his living from his wages. For example, when he is not working for hire, the farm labourer or fisherman is often cultivating a small farm of his own. When employees are supplied with special facilities, such as a free house, this is not accounted for in his earnings. Consequently, the real earnings picture was better than that portrayed by a consideration of the cash earnings of wage-earners alone. However, of the 1,857,105 normal families in the nine provinces, 1,033,863 or 56 p.c. had wage-earner heads and contained 4,371,293 persons or 54 p.c. of the 8,140,001 living in private families. In short, the study will extend to the family life, under relatively homogeneous conditions, of 42 p.c. of the population of Canada.

Family Earnings.—Stated earnings of Canadian wage-earners, for the period June 1, 1930 to June 1, 1931, totalled $2,100,552,700, of which $1,340,546,400 or 63·82 p.c. was earned by heads of families and $11,426,350 or 0·54 p.c. by wives living with their husbands. The latter class consequently received only a very small fraction of the total earnings of wage-earners. Total stated earnings of the members of families with wage-earning heads, including heads, wives, own children and adopted children, amounted to $1,530,319,100 or 73 p.c. of the total earnings, the remaining 27 p.c. being distributed amongst wives and children of non-wage-earners, adult dependents and wards of all types of heads of families, and persons not belonging to private families, *viz.*, lodgers and servants.

LXXXIX.—DISTRIBUTION OF EARNINGS OF MEMBERS OF FAMILIES OF WAGE-EARNERS ACCORDING TO CLASSES OF MEMBERS, CANADA, YEAR ENDED JUNE 1, 1931

Status in Family of Earner	(1) Earnings	(2) P.C. Distribution of Earnings	(3) P.C. of Total Earnings of All Wage-Earners
	$		
All classes	1,530,319,100	100·00	72·85
Heads of families	1,340,546,400	87·60	63·82
Male	1,308,957,000	85·54	62·32
Married, living with wife	1,218,094,400	79·60	57·99
Other	90,862,600	5·94	4·33
Female	31,589,400	2·06	1·50
Wives of heads of families	9,586,200	0·63	0·45
Children of heads of families[1]	180,186,500	11·77	8·58

[1]Includes adopted children.

In column 1 of the above statement, the total stated earnings of the various classes of members of families of wage-earners is given. These earnings are distributed on a percentage basis in column 2 and in column 3 the percentages which the total earnings for each class form of the total earnings of all Canadian wage-earners are given. It is interesting to note that married heads of families living with their wives earned 58 p.c. of the total earnings of all Canadians. Children of wage-earners earned approximately nineteen times as much as wives of wage-earners.

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Earnings of Heads of Families.—It is difficult to interpret the significance of the averages given in Statement XC, since, in each case, they cover groups of families living under very diverse conditions. Male heads earned considerably more than female heads but male heads had approximately 3 dependents to every 1 for females so that average earnings per person were higher for the families with female heads. All the averages may seem surprisingly low but 1930-31 was a year of extreme unemployment and many of the heads, unemployed for the greater part of the year, earned very little. Of the male heads, those who were married and living with their wives had the highest average earnings and single heads the lowest. Single heads, however, had few dependents and, for this reason, were apparently much better off than married heads. In fact, from Statement XCI (a reproduction of Statement IV, Chapter XIX, Volume I), it will be seen that the great majority of single heads of families, both male and female, had no dependents—they were the only persons in their families.

XC.—EARNINGS OF HEADS OF FAMILIES, BY MARITAL STATUS AND SEX OF HEAD, CANADA, YEAR ENDED JUNE 1, 1931

Marital Status of Head	Heads Stating Earnings	Total Earnings	Earnings per Head	Dependents per Head	Earnings per Person
		$	$		$
Males	1,104,483	1,308,957,000	1,185	3·01	300
Married, living with wife	1,005,811	1,218,094,400	1,211	3·23	290
Married, wife absent	25,148	23,399,700	930	0·83	510
Widowed	30,826	31,154,700	1,011	1·78	360
Divorced	845	922,300	1,091	0·75	620
Single	41,853	35,385,900	845	0·11	760
Females	43,301	31,589,400	730	0·98	370
Married	9,254	4,822,800	521	0·025	420
Widowed	16,112	9,370,000	582	1·53	230
Divorced	724	497,400	687	1·22	310
Single	17,211	16,899,200	982	0·16	850

XCI.—HEADS OF FAMILIES, BY SEX, CONJUGAL CONDITION AND CLASS OF FAMILY, CANADA, 1931[1]

Conjugal Condition of Head and Class of Family	Heads of Families			P.C. in Each Family Class		P.C. of Class of Head in Each Family Class	
	Both Sexes	Males	Females	Males	Females	Males	Females
All classes	2,419,360	2,133,819	285,541	88·20	11·80	100·00	100·00
With children only	1,577,090	1,404,567	172,523	89·06	10·94	65·82	60·42
With children and dependents	92,544	82,521	10,023	89·17	10·83	3·87	3·51
With dependents only	69,335	56,424	12,911	81·38	18·62	2·64	4·52
Without children or dependents	680,391	590,307	90,084	86·76	13·24	27·67	31·55
Two married heads	1,857,105	1,857,105	-	100·00	-	100·00	-
With children only	1,335,336	1,335,336	-	100·00	-	71·90	-
With children and dependents	76,821	76,821	-	100·00	-	4·14	-
With dependents only	34,869	34,869	-	100·00	-	1·88	-
Without children or dependents	410,079	410,079	-	100·00	-	22·08	-
One married head	103,313	53,657	49,656	51·94	48·06	100·00	100·00
With children only	56,346	16,259	40,087	28·86	71·14	30·30	80·73
With children and dependents	2,600	1,048	1,552	40·31	59·69	1·95	3·13
With dependents only	2,705	1,953	752	72·20	27·80	3·64	1·51
Without children or dependents	41,662	34,397	7,265	82·56	17·44	64·11	14·63
Widowed head	285,625	92,612	193,013	32·42	67·58	100·00	100·00
With children only	182,614	52,341	130,273	28·66	71·34	56·51	67·49
With children and dependents	13,022	4,618	8,404	35·46	64·54	4·99	4·35
With dependents only	9,116	3,260	5,856	35·76	64·24	3·52	3·03
Without children or dependents	80,873	32,393	48,480	40·05	59·95	34·98	25·12
Divorced head	4,145	1,961	2,184	47·31	52·69	100·00	100·00
With children only	2,234	619	1,615	27·71	72·29	31·57	73·95
With children and dependents	88	33	55	37·50	62·50	1·68	2·52
With dependents only	112	81	31	72·32	27·68	4·13	1·42
Without children or dependents	1,711	1,228	483	71·77	28·23	62·62	22·11
Single head	169,172	128,484	40,688	75·95	24·05	100·00	100·00
With children only	560	12	548	2·14	97·86	0·01	1·35
With children and dependents	13	1	12	7·69	92·31	-	0·03
With dependents only	22,533	16,261	6,272	72·17	27·83	12·66	15·41
Without children or dependents	146,066	112,210	33,856	76·82	23·18	87·33	83·21

[1] Statement IV, Chap. XIX, Vol. I, Census of Canada, 1931.

Statement XCI applies to non-wage-earning heads of families as well as to wage-earners but it serves to indicate the various classes of families with heads in each conjugal condition class. The great majority of single heads of both sexes have no dependents and are really not heads of families at all. This is also true of the greater number of married male heads not living with their wives and the divorced male heads. The low earnings of the divorced male heads do not support the theory that divorces are obtained only by the well-to-do. Widowed male heads of families do not earn as much as those whose wives are still living, possibly because they are older and have passed the age of maximum earning power. They appear to have a slightly higher average number of dependents per family than widowed females and higher average earnings per person are shown in their case. At the same time the widowed female can provide her family with services which the widowed male cannot so it should not be assumed that the dependents of widowed males are more adequately provided for than those of widowed females. While, according to Statement XCI, only 31·57 p.c. of the divorced male heads of families have children of their own living at home, 73·95 p.c. of the divorced female heads have own children. The divorced female head earns more and has fewer dependents than the widowed female head.

Earnings of Heads of Normal Families.—The most significant information with regard to family earnings is that dealing with normal families where husband and wife are living together as heads of families. It was observed in Statement XC that the average earnings of married male heads of families amounted to $1,211 for 1930-31. This is the amount which each head would have earned if wages had been equal for all, from which it may be inferred that an equable distribution of wages would not enable everyone to maintain a high standard of living with the existing level of prices although it would eliminate extreme poverty. In Statements XCII and XCIII the distribution of earnings of heads of normal families is given.

XCII.—MALE FAMILY HEADS, NUMBER AND PERCENTAGE MARRIED AND LIVING WITH THEIR WIVES AND TOTAL EARNINGS, BY EARNINGS CLASS OF HEAD, CANADA, YEAR ENDED JUNE 1, 1931

Earnings Class of Head	Male Heads of Families			
	No.	Married, Living with Wives		
		No.	P.C.	Earnings
				'00
				$
All classes[1]	1,104,483	1,005,811	91·07	12,180,944
No earnings	22,414	19,062	85·05	-
$ 1-$ 49	3,754	3,021	80·47	[2]
50- 449	191,019	161,286	84·43	447,583
450- 949	288,977	262,135	90·71	1,815,538
950- 1,449	285,365	265,661	93·10	3,094,893
1,450- 1,949	161,526	151,793	93·97	2,513,575
1,050- 2,949	98,571	93,060	94·41	2,125,389
2,950- 3,949	31,115	29,355	94·34	953,902
3,950- 4,949	9,327	8,812	94·48	375,418
4,050- 5,949	4,968	4,667	93·94	239,068
5,950- 6,949	2,817	2,651	94·11	162,350
6,950- 7,949	1,319	1,222	92·65	88,256
7,950- 8,949	792	739	93·31	59,993
8,950- 9,949	517	483	93·42	44,058
9,050- 14,949	1,409	1,317	93·47	144,033
14,950- 19,049	322	301	93·48	47,502
19,950 and over	271	246	90·77	69,386

[1]Exclusive of those not stating earnings.
[2]Not added.

XCIII.—PERCENTAGE DISTRIBUTION OF HEADS OF NORMAL FAMILIES AND DISTRIBUTION OF TOTAL EARNINGS, BY EARNINGS CLASS OF HEAD, CANADA, YEAR ENDED JUNE 1, 1931

Earnings Class of Head	P.C. Distribution of					
	Heads of Normal Families			Total Earnings of		
	In Earnings Class	In Earnings Class or below	In Earnings Class or above	Heads in Class	Heads in Class or below	Heads in Class or above
All classes	100·00	-	-	100·00	-	-
No earnings	1·90	1·90	100·00	-	-	-
$ 1-$ 49	0·30	2·20	98·10	[1]	[1]	[1]
50- 449	16·04	18·24	97·80	3·68	3·68	100·00
450- 949	26·06	44·30	81·76	14·91	18·59	96·32
950- 1,449	26·41	70·71	55·70	25·41	44·00	81·41
1,450- 1,949	15·09	85·80	29·29	20·64	64·64	56·00
1,950- 2,949	9·25	95·05	14·20	17·45	82·09	35·36
2,950- 3,949	2·92	97·97	4·95	7·83	89·92	17·91
3,950- 4,949	0·88	98·85	2·03	3·08	93·00	10·08
4,950- 5,949	0·46	99·31	1·15	1·96	94·96	7·00
5,950- 6,949	0·26	99·57	0·69	1·33	96·29	5·04
6,950- 7,949	0·12	99·69	0·43	0·72	97·01	3·72
7,950- 8,949	0·07	99·76	0·31	0·49	97·50	2·99
8,950- 9,949	0·05	99·81	0·24	0·36	97·86	2·50
9,950- 14,949	0·13	99·94	0·19	1·18	99·04	2·14
14,950- 19,949	0·03	99·97	0·06	0·39	99·43	0·96
19,950 and over	0·03	100·00	0·03	0·57	100·00	0·57

[1]Not added.

It will be seen from Statement XCIII that 44·30 p.c. of the heads earned less than $950 during the year June 1, 1930 to June 1, 1931. Many of these were unemployed during part of the year, accounting for their presence in the lower earnings classes. As already pointed out in the Introduction, earnings include only wages.

The earnings class $950–$1,449, including 26·41 p.c. of the wage-earner heads, was the modal class. Heads in this class earned 25·41 p.c. of the total wages of heads, so we have a typical earnings class including one-quarter of the wage-earning heads of families earning one-quarter of the total earnings. Those who suggest an equable distribution of wages must regard this class as their ideal since the standard of living enjoyed by it would be that enjoyed by all wage-earners if earnings were equally dispersed provided there was no resultant change in the efficiency of production. A large proportion, *viz.*, 44·30 p.c. of the married heads of families came below this class and earned 18·59 p.c. of the total earnings of heads while 29·09 p.c. of the heads earned more than $1,450 and 56·00 p.c. of the total earnings of heads.

Variation in Family Size and Composition with Earnings of Heads.—It is obvious from Statement XCIV that the trend in family size with earnings of head is not linear but fluctuates upwards and downwards. Since the number of heads per family for each group is fixed at 2, variation in the average size of the family is due to variation in the number of own children; the number of guardianship children and other dependents per family being relatively small (see Statement LXXII, Chapter VII). Heads earning $450–$949 had the largest number of children per family, 2·32, while those earning $3,950–$4,950 had the smallest number per family, 1·83. That is, the range in children per family for the 17 earnings classes was only 0·49 or 23 p.c. of weighted average children per family for all classes. The irregularity of the trend, however, is more significant than the smallness of the range since it indicates that family size is not a simple function of the earnings of the head. Interpretation of the significance of the averages in column 2 of Statement XCIV is rendered difficult since the age distribution of the heads is quite different for each earnings class due to the fact that earnings vary with age. Unfortunately no data are available with regard to the age distribution of the heads by earnings classes, but it is apparent from the age distribution of the children, given in columns 3, 4 and 5 of Statement XCIV, that the heads in the higher earnings classes are older than those in the lower. However, too much reliance cannot be placed on the use of ages of children as a basis for determining the age distribution of the heads since the former distribution, depending on the ages at which children leave home, varies with the earnings of the heads.

XCIV.—SIZE AND COMPOSITION OF NORMAL FAMILIES WITH WAGE-EARNER HEADS, NUMBER OF WIVES AND CHILDREN GAINFULLY OCCUPIED AND AVERAGE EARNINGS OF WIVES AND CHILDREN, BY EARNINGS CLASS OF HEAD, CANADA, 1931

Earnings Class of Head	No. per Family							Average Earnings of	
	Persons (1)	Own Children in Age Group				Gainfully Occupied		Children Stating Earnings (8)	Wives Stating Earnings (9)
		All Ages (2)	Under 7 (3)	7–14 (4)	15 and over (5)	Children (6)	Wives (7)		
								$	$
All classes	4·23	2·17	0·78	0·78	0·61	0·33	0·030	485	516
No earnings	4·00	1·95	0·50	0·64	0·81	0·55	0·094	470	476
$ 1–$ 49	4·03	1·97	0·68	0·66	0·63	0·42	0·089	352	346
50– 449	4·31	2·25	0·91	0·77	0·57	0·34	0·050	326	319
450– 949	4·38	2·32	0·90	0·82	0·60	0·35	0·036	416	460
950– 1,449	4·26	2·20	0·79	0·80	0·61	0·34	0·025	505	641
1,450– 1,949	4·13	2·07	0·70	0·77	0·60	0·30	0·017	598	833
1,950– 2,949	4·01	1·95	0·60	0·74	0·61	0·26	0·010	718	1,023
2,950– 3,949	3·93	1·87	0·53	0·70	0·64	0·23	0·007	767	1,171
3,950– 4,949	3·90	1·83	0·50	0·70	0·63	0·20	0·005	835	1,263
4,950– 5,949	3·95	1·87	0·44	0·72	0·71	0·19	0·005	879	1,698
5,950– 6,949	3·94	1·86	0·41	0·68	0·77	0·19	0·005	851	1,278
6,950– 7,949	3·96	1·90	0·42	0·73	0·75	0·20	0·002	864	1,867
7,950– 8,949	4·03	1·97	0·43	0·74	0·80	0·20	0·003	914	-
8,950– 9,949	3·98	1·90	0·39	0·66	0·85	0·15	0·006	703	2,867
9,950– 14,949	4·02	1·95	0·35	0·72	0·88	0·18	0·003	1,101	4,750
14,950– 19,949	4·19	2·10	0·30	0·83	0·97	0·17	-	1,012	-
19,950 and over	3·93	1·87	0·28	0·61	0·98	0·15	0·004	1,844	-

It may be seen from column 3 that after we pass the first two earnings classes the average number of children under 7 years of age per family decreases steadily with increasing earnings of head. Small children are most numerous, therefore, in the families with heads in the lower earnings classes, a fact which may have encouraged the popular belief that the poor have much larger families than the more prosperous. In Statement XCVI, page 104, it will be seen that 48·30 p.c. of the children under 7 years of age were found in families with heads in the two earnings classes $50–$449 and $450–$949. An additional 1·47 p.c. were found in the no-earnings and $1-$49-per-annum classes so that 49·77 p.c. of the children of wage-earners under 7 years of age were being reared in 1930-31 under conditions of near poverty. There is no consistent trend between the number of children 7–14 years of age per family with earnings of head but the number of children 15 years of age and over per family steadily increases as we ascend the earnings scale. This is because the heads in the higher earnings classes are older and also because they keep their families together longer.

The classes reporting no earnings and earnings amounting to less than $50 are obviously quite different from the other low earnings classes. Their children tend to be older and there are a large number of gainfully occupied children per family and they show better earnings than the children of the heads in the other low earnings classes probably because they are older and work more steadily; 9·4 p.c. of the wives in the no-earnings class and 8·9 p.c. of those of heads who earned less than $50 (by far the highest percentages for any of the earnings classes) were gainfully occupied. This reveals the identity of the heads reporting no earnings—in a great many cases they were only nominal heads of their families, their wives or children being the real breadwinners. The age distribution of the children indicates that many of the heads were older men.

The number of children gainfully occupied per family decreases steadily with increasing earnings of heads despite the fact that there are more children 15 years of age and over in the families with heads in the higher earnings classes. The average earnings of gainfully occupied children, however, increased considerably with increasing earnings of head, the inference being that children of the more well-to-do, in addition to being probably better trained by virtue of a more complete education, worked only when they could secure more remunerative employment while the children of the poorer heads were forced to take whatever work they could get. It will be seen later that for occupation groups in Quebec and Ontario the percentage of children 15 years and over at school correlates very highly with earnings of heads.

Only 3 p.c. of the wives of wage-earners were gainfully occupied and these were confined largely to the lower earnings classes. The few wives of heads in the higher earnings classes who did earn, earned fairly large salaries indicating that they generally followed professions through choice while the wives of the poorer heads were obliged to accept casual or poorly remunerated employment.

Children's Contributions to Family Earnings.—It is obvious that the gainfully occupied children bear a considerable share of the burden of supporting their families. In Statement XCV the ratio of children gainfully occupied per family to children 15 years of age and over is given for each earnings class of head. In addition, the total earnings of wage-earning children are expressed as a percentage of the total earnings of heads for each class.

XCV.—RATIO OF GAINFULLY OCCUPIED CHILDREN PER FAMILY TO CHILDREN 15 YEARS OF AGE AND OVER, AND EARNINGS OF CHILDREN AS PERCENTAGE OF EARNINGS OF HEADS, FOR NORMAL FAMILIES, BY EARNINGS CLASS OF HEAD, CANADA, YEAR ENDED JUNE 1, 1931

Earnings Class of Head	Ratio Children Gainfully Occupied to Children 15 Yenrs of Age and over	Earnings of Children as P.C. of Earnings of Heads[2]
All classes	-	13·5
No earnings	0·68	-
$ 1–$ 49	0·67	1
50– 449	0·60	40·4
450– 949	0·58	21·0
950– 1,449	0·56	14·7
1,450– 1,949	0·50	10·8
1,950– 2,949	0·43	8·1
2,950– 3,949	0·36	5·5
3,950– 4,949	0·32	3·8
4,950– 5,949	0·27	3·3
5,950– 6,949	0·25	2·6
6,950– 7,949	0·27	2·4
7,950– 8,949	0·25	2·2
8,950– 9,949	0·18	1·1
9,950– 14,949	0·20	1·8
14,950– 19,949	0·18	1·1
19,950 and over	0·15	1·0

[1]Not given.
[2]Available for wage-earning children only.

Earnings of children amounted to 40·4 p.c. of the earnings of the heads in the earnings class $50–$449. When it is remembered that this class included, in 1931, 16·04 p.c. of all families, the importance of the assistance which children afforded their families in meeting the crises of irregular employment will be fully realized. The family seems to be in a stronger position during periods of economic depression than the individual, and the old adage that there is safety in numbers holds particularly true when the individuals are connected by family ties.

It is the family with young children which would appear to suffer most when the earnings of the head are low. The children are too young to offer the family any financial assistance and the mother is forced to stay at home to care for them.

XCVI.—PERCENTAGE DISTRIBUTION OF MEMBERS OF FAMILIES, BY EARNINGS CLASS OF HEAD, CANADA, 1931

Earnings of Class of Head	P.C. Distribution of Own Children in Age Group				P.C. Gainfully Occupied	
	All Ages	Under 7	7–14	15 and over	Children	Wives
All clnsses	100·00	100·00	100·00	100·00	100·00	100·00
No earnings	1·70	1·21	1·55	2·53	3·20	5·96
$ 1–$ 49	0·27	0·26	0·25	0·31	0·39	0·90
50– 449	16·60	18·60	15·82	14·99	16·84	26·71
450– 949	27·80	29·70	27·44	25·81	27·83	31·37
950– 1,449	26·74	26·64	26·88	26·71	27·42	22·19
1,450– 1,949	14·34	13·38	14·89	14·91	13·78	8·69
1,950– 2,949	8·29	7·11	8·72	9·25	7·29	3·23
2,950– 3,949	2·50	1·94	2·62	3·10	2·06	0·66
3,950– 4,949	0·74	0·56	0·78	0·91	0·52	0·13
4,950– 5,949	0·40	0·26	0·43	0·55	0·28	0·08
5,950– 6,949	0·22	0·14	0·23	0·33	0·15	0·04
6,950– 7,949	0·11	0·06	0·11	0·15	0·07	0·01
7,950– 8,949	0·07	0·04	0·07	0·10	0·05	0·01
8,950– 9,949	0·04	0·02	0·04	0·07	0·02	0·01
9,950– 14,949	0·12	0·06	0·12	0·19	0·07	0·01
14,950– 19,949	0·03	0·01	0·03	0·05	0·02	-
19,950 and over	0·02	0·01	0·02	0·04	0·01	-

XCVII.—PERCENTAGE DISTRIBUTION OF MEMBERS OF FAMILIES WITH EARNINGS OF HEADS LESS THAN AND MORE THAN GIVEN AMOUNTS, CANADA, 1931

Earnings of Head	P C Distribution of Own Children in Age Group				P.C. Gainfully Occupied	
	All Ages	Under 7	7–14	15 and over	Children	Wives
(A) IN FAMILIES WITH HEADS EARNING LESS THAN SPECIFIED AMOUNT						
All classes	100·00	100·00	100·00	100·00	100·00	-
No earnings	1·70	1·21	1·55	2·53	3·20	5·06
$ 49.50	1·97	1·47	1·80	2·84	3·59	6·86
449.50	18·57	20·07	17·62	17·83	20·43	33·57
949.50	46·37	49·77	45·06	43·64	48·26	64·94
1,449.50	73·11	76·41	71·04	70·35	75·68	87·13
1,949.50	87·46	89·79	86·83	85·26	89·46	95·82
2,949.50	95·75	96·90	95·55	94·51	96·75	99·05
3,949.50	98·25	98·84	98·17	97·61	98·81	99·71
4,949.50	98·99	99·40	98·95	08·52	99·33	99·84
5,940.50	99·39	99·66	99·38	99·07	99·61	99·02
6,949.50	99·61	99·80	99·61	99·40	99·76	99·06
7,049.50	09·72	99·86	99·72	99·55	99·83	99·97
8,940.50	99·79	99·00	09·79	09·65	99·88	99·98
9,949.50	99·83	99·92	09·83	99·72	99·90	99·99
14,949.50	99·95	99·98	99·95	99·91	99·97	100·00
19,949.50	99·98	99·99	99·98	99·96	99·99	-
(B) IN FAMILIES WITH HEADS EARNING SPECIFIED AMOUNT OR MORE						
All classes	100·00	100·00	100·00	100·00	100·00	100·00
$ 0.50	98·30	98·79	98·45	97·47	96·80	94·04
49.50	98·03	98·53	98·20	97·16	96·41	93·14
449.50	81·43	79·93	82·38	82·17	79·57	66·43
949.50	53·63	50·23	54·94	56·36	51·74	35·06
1,449.50	26·89	23·59	28·06	29·65	24·32	12·87
1,949.50	12·54	10·21	13·17	14·74	10·54	4·18
2,949.50	4·25	3·10	4·45	5·49	3·25	0·95
3,949.50	1·75	1·16	1·83	2·39	1·19	0·29
4,949.50	1·01	0·60	1·05	1·48	0·67	0·16
5,949.50	0·61	0·34	0·62	0·93	0·39	0·08
6,949.50	0·39	0·23	0·39	0·60	0·24	0·04
7,949.50	0·28	0·14	0·28	0·45	0·17	0·03
8,940.50	0·21	0·10	0·21	0·35	0·12	0·02
9,940.50	0·17	0·08	0·17	0·28	0·10	0·01
14,949.50	0·05	0·02	0·05	0·09	0·03	-
19,949.50	0·02	0·01	0·02	0·04	0·01	-

Statements XCVI and XCVII contain an interesting distribution of family dependents and workers by earnings classes of heads. The high percentage of children under 7 years of age in families with heads in the lower earnings classes has already been mentioned. It is interesting to note from Statement XCVIIA that 64·94 p.e. of the gainfully occupied wives were those whose husbands earned less than $950.

Occupational Classification.—In a young country like Canada where hard and fast lines of social demarcation have not yet become established and a strong democratic spirit tends to keep down social barriers, the significance of social class is not so important as in European and Asiatic countries. Fertility studies in Europe devote much attention to differentials between social classes; the upper classes have been found to marry later and to be less fertile in marriage than the lower classes. Similar studies in the United States have given rise to the theory that families of inherent low fertility have tended to rise to prominence on that account; the less fertile families have accumulated social and educational advantages not available to large families from generation to generation. The influence of class on family size in Canada may best be examined on the basis of occupation, since it is our best criterion of the individual's training, education, social background and physical environment.

The census compilations of family data by occupation of head were confined to normal families of wage-earners so that we can measure average earnings in each occupation. There were 368 individual occupations, each containing 10 or more families but, since so many groups would be unwieldy in analysis, only those occupations containing 1,000 or more families have been dealt with. There were 135 of these including 934,971 families or 90 p.c. of the total number (1,033,863) of normal families with wage-earning heads.

XCVIII.—NUMBER OF FAMILIES, PERSONS PER FAMILY AND RELEVANT DATA FOR 135 OCCUPATIONS, CANADA, 1931

Occupation	X_1 Average Persons per Family	X_2 Average Earnings of Heads	X_3 P.C. of Families Living in Cities of 100,000 and over	X_4 P.C. Gainfully Occupied[6] of British Racial Origin	X_5 Earnings of Wage-Earners 25-34 Years of Age as P.C. of Those 45-54	X_6 P.C. of Wage-Earners 35-54 Years of Age	No. of Families
		$					
All classes[1]	4·17	1,424	36·6	61·4	84·4	48·4	934,971
Foremen and overseers[5]	5·26	1,630	10·9	41·0	87·0	59·0	1,216
Section foremen, sectionmen; trackmen	4·88	1,015	4·2	32·8	71·9	48·7	12,998
Foresters and timber cruisers	4·87	1,066	3·4	51·6	80·7	44·8	1,491
Lumbermen	4·87	483	4·5	23·0	94·8	36·1	10,033
Coal miners	4·87	700	0·9	58·3	95·1	51·4	9,905
Labourers (coal mining)	4·84	644	0·6	63·2	99·7	38·5	2,318
Other machine operators[5]	4·81	982	4·2	37·6	95·9	41·4	1,381
Millwrights (metal products)	4·75	1,118	23·2	63·2	99·0	59·0	2,629
Sawyers (wood products)	4·73	746	10·7	48·3	84·1	45·9	2,206
Fishermen	4·72	526	4·5	41·4	80·6	41·2	4,114
Boiler firemen[5]	4·72	1,002	26·5	56·0	90·1	50·8	4,567
Labourers (other mining)	4·71	745	5·3	32·5	105·3	30·2	3,484
Carpenters	4·69	839	33·5	50·7	89·2	53·6	48,083
Paper makers	4·63	1,435	5·8	41·8	81·3	33·0	1,965
Stone cutters, dressers, and carvers	4·62	1,151	40·8	48·2	84·7	47·8	1,682
Foremen and overseers (wood products)	4·62	1,388	14·5	54·5	87·4	57·9	1,359
Inspectors, graders, and scalers (wood products)	4·59	1,035	16·5	50·3	84·6	46·3	1,401
Foremen and overseers (building and construction)	4·59	1,416	32·1	62·5	97·2	60·5	3,923
Furnacemen (metal products)	4·59	1,111	24·6	55·5	97·1	48·1	285
Labourers and unskilled workers[2]	4·56	594	28·2	39·9	89·4	40·5	190,655
Teamsters, draymen, carriage drivers	4·55	863	35·9	56·2	97·0	43·9	10,308
Foremen, inspectors (steam railway)	4·55	1,761	24·9	73·9	86·6	67·5	4,435
Longshoremen and stevedores	4·54	725	56·5	43·8	94·5	53·1	2,726
Blacksmiths, hammermen, and forgemen (mfg.)	4·53	978	31·5	52·4	85·5	51·6	0,404
Machine operators (boots and shoes)	4·53	814	61·6	26·2	97·1	38·6	2,907
Locomotive engineers	4·51	2,250	24·2	81·1	63·0	77·2	0,638
Cutters (leather and leather products)	4·48	845	57·8	31·2	88·8	39·0	1,129
Locomotive firemen	4·47	1,400	20·7	74·3	67·0	55·2	4,378
Brakemen (steam railway)	4·46	1,430	22·6	73·0	67·2	62·2	6,355
Boilermakers, platers, and riveters (mfg.)	4·45	1,078	37·8	68·3	84·1	56·8	3,443
Car builders and repairers (mfg.)	4·45	1,232	28·6	69·7	92·1	63·6	3,487
Yardmen, n.e.s. (steam railway)	4·42	1,362	27·3	76·6	76·7	57·6	1,537
Conductors (steam railway)	4·41	2,159	24·7	80·3	75·6	75·7	4,098
Moulders, coremakers, and casters	4·41	803	33·1	54·7	88·5	55·1	5,734
Butter and cheese makers	4·40	994	10·2	41·0	86·5	30·3	1,436
Brick and stone masons	4·37	876	40·0	58·1	88·5	49·1	6,627
Firemen—fire department	4·37	1,680	61·5	68·0	88·8	53·2	3,814
Street car conductors	4·34	1,359	74·9	54·1	82·8	60·1	3,107
Plumbers, steam fitters, and gas fitters	4·32	1,129	42·1	63·0	80·4	47·8	8,559
Hoistmen, cranemen, and derrickmen[3]	4·32	1,166	27·4	71·2	103·8	53·3	2,427
Filers and grinders	4·31	929	27·4	63·9	86·9	47·3	1,338
Tailors (mfg.)	4·31	929	77·9	26·3	88·7	52·1	4,753
Captains, mates, and pilots	4·30	1,595	25·0	58·4	74·5	50·7	2,539
Plasterers and lathers	4·28	829	53·5	58·0	92·5	46·7	3,174
Watchmen and caretakers	4·28	975	33·3	64·8	93·2	44·0	9,693
Ironers and pressers	4·27	807	15·7	20·9	97·2	12·0	1,770
Postmen and mail carriers	4·27	1,185	27·9	69·9	87·7	55·2	4,997
Stationary enginemen, n.e.s.	4·26	1,253	35·1	77·2	90·3	55·7	12,143
Motormen (electric railway)	4·26	1,364	61·8	70·0	88·0	63·1	4,055
Switchmen, signalmen, flagmen	4·26	1,307	28·0	74·1	84·3	52·0	3,033
Weavers (textile products)	4·25	732	14·4	30·4	107·3	28·9	1,690
Foremen and overseers (agriculture)	4·24	1,104	2·1	66·2	70·6	50·7	1,978
Miners (other mining)	4·23	1,081	3·2	34·0	117·8	39·2	4,662
Bakers (mfg.)	4·22	1,054	42·2	52·4	85·8	37·4	4,518
Deliverymen and drivers, n.s.	4·22	1,016	49·0	50·3	92·0	33·3	2,745
Police and detectives	4·21	1,630	45·3	70·3	90·1	51·2	8,294
Agents—ticket, station (railway)	4·21	2,018	12·1	77·2	72·6	61·3	4,221
Floorwalkers, foremen, overseers (commercial)	4·20	1,649	50·1	71·5	86·6	56·9	1,239
Baggagemen, expressmen	4·20	1,571	31·8	78·4	77·0	59·2	1,512
Engineering officers (water transportation)	4·20	1,315	28·4	71·3	76·7	52·9	2,212
Foremen and overseers (metal products)	4·20	1,713	30·8	76·2	78·5	59·9	4,552
Butchers and slaughterers (mfg.)	4·19	1,032	45·0	52·9	100·1	41·1	5,218
Painters, decorators, and glaziers	4·18	852	46·8	59·1	87·1	44·8	15,744

n.s.—not specified; n.e.s.—not elsewhere specified.
[1]Unweighted means for classes given.
[2]Not agricultural, mining, or logging.
[3]Electric light and power (including stationary enginemen).
[4]Commercial occupations.
[5]Pulp, paper, and paper products.
[6]Gainfully occupied is here used because occupation and racial origin were not cross-classified for wage-earners in 1931.

XCVIII.—NUMBER OF FAMILIES, PERSONS PER FAMILY AND RELEVANT DATA FOR 135 OCCUPATIONS, CANADA, 1931—Con.

Occupation	X_1 Average Persons per Family	X_2 Average Earnings of Heads	X_3 P.C. of Families Living in Cities of 100,000 and over	X_4 P.C. Gainfully Occupied[6] of British Racial Origin	X_5 Earnings of Wage-Earners 25-34 Years of Age as P.C. of Those 45-54	X_6 P.C. of Wage-Earners 35-54 Years of Age	No. of Families
		$					
Sheet metal workers and tinsmiths	4·17	1,035	46·8	61·0	87·3	43·8	3,715
Seaman, sailors, and deckhands	4·17	806	15·7	60·5	79·8	49·2	2,212
Machinists (metal products)	4·16	1,107	37·3	70·5	90·0	49·7	21,539
Electricians and wiremen	4·16	1,373	37·3	64·5	83·1	40·0	11,498
Wood turners, planers—wood machinists	4·15	839	22·9	58·2	88·9	41·4	1,490
Sewers, sewing machinists—shop, factory (mfg.)	4·14	837	89·9	11·1	96·2	35·7	1,371
Officers—steam railway	4·14	3,830	32·7	84·1	64·3	69·6	1,562
Cooks	4·14	890	38·5	28·5	99·0	61·0	5,273
Dynamo, motor, and switch board operators	4·13	1,493	20·1	74·3	89·6	44·1	1,315
Farm labourers	4·13	472	5·0	44·7	83·3	28·1	41,217
Finishers and polishers (wood products)	4·11	825	27·3	62·8	85·4	48·8	1,392
Packers, wrappers, and labellers	4·10	899	38·2	66·7	87·5	41·3	2,041
Machine tenders, n.e.s. (metal products)	4·10	818	31·2	72·9	97·5	42·9	2,394
Polishers and buffers (metal products)	4·09	797	34·9	71·6	93·4	44·8	1,257
Mechanics, n.e.s. (metal products)	4·08	1,116	34·6	60·9	84·8	35·7	21,740
Structural iron workers and steel erectors	4·08	946	43·5	63·8	85·6	43·1	1,064
Truck drivers	4·07	965	41·4	63·8	88·8	29·7	22,084
Commercial travellers	4·07	1,978	53·6	56·4	83·8	59·1	12,197
Purchasing agents and buyers	4·06	2,021	20·4	76·2	78·0	59·2	4,838
Sales agents, canvassers, demonstrators	4·06	1,084	35·2	67·0	83·8	65·6	4,422
Inspectors, gaugers, and samplers[4]	4·04	1,516	34·4	78·1	77·6	46·2	1,729
Public service officials	4·03	2,348	32·7	75·0	73·5	57·6	8,224
Managers—other transportation	4·03	1,633	6·6	72·2	88·1	57·0	2,137
Managers (building and construction)	4·02	2,981	41·7	64·4	78·4	67·7	1,146
Fitters, assemblers, and erectors	4·02	881	29·6	77·0	86·0	45·0	2,365
Electric and oxy-acetylene welders (mfg.)	4·02	1,106	37·2	68·0	88·3	37·0	1,464
Other ranks (army, navy and air force)	4·01	1,337	72·9	88·0	64·7	33·9	1,298
Insurance agents	4·00	1,901	41·9	69·1	76·5	67·6	10,038
Pressmen and plate printers	3·98	1,562	61·2	68·2	83·2	44·1	1,086
Telegraph operators	3·96	1,720	23·8	71·3	83·4	40·6	3,663
Cabinet and furniture makers	3·96	919	37·4	56·6	86·4	49·1	2,183
Tool makers, die cutters and sinkers	3·95	1,192	33·4	79·7	92·0	52·7	2,081
Linemen and cablemen	3·95	1,430	29·7	81·1	85·0	37·9	3,829
Insurance officials	3·95	4,189	50·3	79·6	57·9	66·8	2,552
Brokers and agents, n.e.s.	3·94	2,138	36·5	74·5	75·6	60·3	3,457
Shippers (warehousing and storage)	3·94	1,143	48·3	74·0	90·1	42·4	9,091
Barbers, hairdressers, manicurists	3·94	974	46·9	48·1	96·3	40·2	3,498
Mechanical engineers	3·93	2,486	43·5	76·0	78·5	50·7	2,034
Collectors (trade)	3·92	1,319	55·2	62·2	86·7	42·6	1,175
Furriers—fur cutters, dressers, sewers	3·91	1,179	85·7	16·4	77·4	32·7	1,059
Chauffeurs and bus drivers	3·91	985	55·1	49·3	81·7	30·4	6,576
Compositors; printers, n.s.	3·90	1,665	53·7	72·3	77·9	40·6	6,457
Upholsterers	3·89	933	41·4	58·3	80·7	36·6	1,585
Clergymen and priests	3·89	1,800	10·7	57·6	58·7	68·8	6,284
Messengers (other transportation and communication)	3·88	1,221	54·3	65·7	76·1	35·8	1,381
Warehousemen and storekeepers	3·88	1,236	35·8	86·3	89·4	48·1	3,495
Cutters (textile products)	3·86	1,139	71·6	44·9	86·3	39·3	1,251
Managers—metal products	3·85	4,042	42·0	71·3	58·7	69·1	2,660
Civil engineers and surveyors	3·85	2,851	44·5	79·1	68·1	58·7	4,480
Managers—retail stores	3·84	2,420	39·6	54·0	67·7	53·6	10,581
Officials, finance	3·84	3,516	31·4	80·0	54·9	75·9	4,489
Elevator tenders	3·84	905	63·0	72·6	87·8	37·4	1,502
Professors and college principals	3·82	3,633	43·9	42·0	40·7	50·3	1,118
Jewellers, watchmakers, repairers	3·81	1,345	58·4	58·6	89·4	45·0	1,173
Janitors and sextons	3·79	919	40·7	76·4	86·0	47·8	11,181
Office clerks	3·79	1,519	47·7	75·0	85·4	34·4	37,454
Salesmen	3·79	1,351	43·1	63·6	87·4	37·9	46,154
Managers—wholesale trade	3·78	3,511	48·8	70·6	67·7	67·4	4,966
Accountants and auditors	3·77	2,404	46·4	80·3	84·1	57·9	11,736
Real estate agents and dealers	3·74	1,832	52·2	75·0	89·0	57·2	1,298
Teachers—school	3·70	2,115	30·7	61·5	70·1	32·7	7,001
Authors, editors, and journalists	3·69	2,645	55·3	78·0	69·7	42·8	1,451
Electrical engineers	3·67	2,645	50·1	84·4	69·6	47·7	2,600
Bookkeepers and cashiers	3·65	1,490	47·8	69·4	89·2	28·7	12,960
Waiters	3·63	945	62·0	36·7	83·0	45·9	3,795
Bell-boys and porters—not railway	3·61	878	54·6	65·6	84·3	38·6	1,350
Musicians and music teachers	3·59	1,413	58·9	62·3	95·3	37·1	1,096
Advertising agents	3·58	2,685	59·4	84·2	78·6	50·3	1,118
Stock and bond brokers	3·56	2,799	64·1	83·7	89·4	55·7	1,836
Designers and draughtsmen	3·55	1,975	48·9	79·7	80·8	34·8	2,242
Chemists, assayers, metallurgists	3·52	2,275	42·4	73·6	76·6	34·8	1,730
Domestic servants, n.e.s.	3·27	691	46·9	30·1	93·0	39·5	1,191

In Statement XCVIII, occupations have been ranked according to size of family. Foremen and overseers in pulp and paper and paper products had the largest families and domestic servants the smallest. Since number of heads for all classes was fixed at 2, the variation in family size was confined to the number of dependents per family which ranged from 3·26 for the largest average family to 1·27 for the smallest. That is, heads of families occupied as foremen and overseers in pulp and paper and paper products had 2·6 dependents to every one for those occupied as domestic servants. This would seem to indicate that occupation has an important bearing on family size in Canada.

Supplementary data have been given in Statement XCVIII in order to evaluate the importance of incidental factors in determining family size for each occupation. If these figures are compared for the two extreme classes, foremen and overseers in pulp and paper and paper products, and domestic servants, it will be seen that average earnings for heads of families engaged in the former occupation amounted to $1,630 as compared with $691 for heads engaged in the latter. That is, earnings were much higher for heads of families in the occupation with the largest families than for the occupation with the smallest families indicating that there are wide deviations from the rule that family size correlates inversely with earnings of head and explaining why a more marked relationship was not discovered between family size and earnings of head in Statement XCIV. Of the families with heads engaged in the former occupation, 10·9 p.c. were living in cities of 100,000 population and over, as compared with 46·9 p.c. of the families of domestic servants. The fact that the pulp and paper industry is scattered throughout the country in small towns rather than centralized in the large cities probably is connected with the large size of the families of persons engaged in it. In both occupations a relatively low percentage of the gainfully occupied are of British racial origin. Domestic servants appeared to reach their maximum earnings younger than foremen and overseers in pulp and paper and paper products, so that none of the difference in family size could be attributed to this factor; 59·0 p.c. of the wage-earning foremen and overseers in pulp and paper and paper products were between the ages of 35 and 54 compared with 39·5 p.c. of the domestic servants. The age distribution of those engaged in the former occupation was consequently more favourable to large average family size than for those engaged in the latter.

It is obvious that these factors, important as they may be, cannot be regarded as accounting for the total range in family size between the two occupational classes. The small size of the families of domestic servants is easily explained on the basis of the occupation itself. A very large family would most likely debar a man from employment as a servant while the employer might consider childless families highly desirable, particularly when he provided living accommodation for them. The domestic realizing his position would not wish to burden himself with a large family. This is a striking indication of the possibility of economic factors lowering the birth rate.

It is obvious that the increasing demand for domestic servants cannot be filled by the children of domestics who, as a class, are scarcely reproducing themselves. During the period 1921-31, domestic servants increased from 83,923 to 142,554. The increase must have come from other occupational classes and the children of persons engaged in other occupations. This throws an interesting light on the current shortage of competent domestic servants; domestics are generally the cast-offs of other occupational classes.

Type of Occupation.—The 135 occupations shown in Statement XCVIII may conveniently be divided into fifteen groups of nine, as spaced off in the statement. The first group, containing the nine occupations with the largest average persons per family, is comprised of occupations featuring outdoor or heavy physical work, *viz.*, sectionmen, foresters and timber cruisers, lumbermen, miners and labourers in coal mines, machine operatives in pulp and paper and paper products, millwrights and sawyers. Foremen and overseers in the manufacturing of pulp and paper and paper products have probably risen from workers in similar occupations. In contrast, the occupations in the last group, including those with the smallest families, are indoor occupations and do

not entail manual work. If the intermediate groups are observed one by one, from those containing the largest families to those containing the smallest, a gradual change from the outdoor occupations to the indoor, office and professional occupations is noted. The investigation may be carried further by classifying the occupations into seven types, A, B, C, D, E, F, and G on the basis of the nature of the work. The types may be described as follows:—

Type	Nature of Work
A	Outdoor—heavy manual
B	Indoor—heavy manual
C	Outdoor—light manual and supervisory
D	Indoor—light manual and supervisory
E	Officials, managers, salesmen
F	Professional and clerical
G	Personal service

There was, unfortunately, no method available for making the above classification on a quantitative basis. Consequently, the classification was entirely arbitrary and difference of opinion may exist as to the type to which some of the occupations belong. It would be difficult to attach labourers and unskilled workmen to any one type and a similar difficulty arose with respect to carpenters. However, the remaining 133 occupations were classified and in Statement XCIX the distribution of the individual occupations of each type according to average persons per family is given.

It is evident from the Statement XCIX that there is a well-defined relationship existing between average persons per family and the nature of the occupation of the head. The A occupations, where the work is mostly outdoor and requires a strong physique, produce the largest families and the F and G occupations including the professions, the clerks, the barbers, the domestics, etc., produce the smallest families. This is in line with the theory that as we remove man from the environment of nature and place him in artificial surroundings his reproductive rate decreases.

The relationship can best be measured by means of the correlation ratio between average persons per family and type of occupation of head.* The correlation ratio was ·815. Consequently, 66 p.c. of the variance in average persons per household from occupation to occupation is associated with general types into which the occupations can be divided.

Type of occupation measures psychological characteristics as well as physiological. Mode of living varies from occupation to occupation. The professional man leads a very different life from the labourer and social ambitions create a strong incentive for voluntary limitation of family size; in addition, the professional man marries later than the labourer.

* The square root of the complement of the sum of the variance in average persons per household within classes of occupation from the class mean divided by the total variance from the general mean for all classes. The correlation ratio may be derived from the following formula:—

$$r^2 = 1 - \frac{\sum_{K}^{K} n_K (x - \bar{x}_K)^2}{\sum_{N} (x - \bar{x})^2}$$

where x — average persons per family for individual occupations.

x_K — mean of the averages for the Kth class.

$\bar{x}$ — average person per family for all classes.

n_K — number of occupations in the Kth class.

N — total number of occupations.

XCIX.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 133 OCCUPATIONS ACCORDING TO AVERAGE NUMBER OF PERSONS PER FAMILY IN RELATION TO TYPE OF OCCUPATION OF FAMILY HEAD, CANADA, 1931

Average Persons per Family	Type of Occupation of Head							
	A	B	C	D	E	F	G	Total
3·25-3·34							1	1
3·35-3·44								
3·45-3·54						1		1
3·55-3·64					2	2	2	6
3·65-3·74					1	4		5
3·75-3·84				1	4	4	1	10
3·85-3·94			2	5	4	3	1	15
3·95-4·04			2	5	6	1		14
4·05-4·14	1	2	1	7	4			15
4·15-4·24		4	5	7	1			17
4·25-4·34	1	3	5	5				14
4·35-4·44	1	3	1	1				6
4·45-4·54	3	4	1	1				9
4·55-4·64	2	2	4					8
4·65-4·74	2	2						4
4·75-4·84	1	1	1					3
4·85-4·94	3	1						4
4·95-5·04								
5·05-5·14								
5·15-5·24								
5·25-5·34			1					1
Total	14	22	23	32	22	15	5	133
Mean persons per family	4·60	4·43	4·34	4·12	3·92	3·76	3·64	4·17

The A occupations are largely rural and the E, F and G occupations urban. Families with heads in the latter occupations are living in the larger cities where the density of population is high. Urban families are smaller than rural due particularly to the absence of very large families in the cities. It was observed from Statement XXXIII, page 54, Chapter IV, that large families in the city of Toronto generally suffered from very inadequate housing accommodation. The inference was drawn that their inability to provide sufficient space for housing a large family would influence parents to voluntarily limit the sizes of their families. The importance of the contribution of the large family class to our population increase was clearly indicated in Chapter VIII and its absence in the larger cities is reducing the rate of natural increase of our population. The distribution of labour which results in the concentration of production in large cities is, therefore, considerably reducing the rate of population growth. This point will be more thoroughly dealt with later.

Correlation between Average Family Size and Average Earnings of Heads.—Referring back to the analysis of the data presented in Statement XCVIII, page 106, it is seen that the unweighted mean of the average persons per household for the 135 occupations was 4·17. The mean variance of the averages about this mean was 0·12 so that their standard deviation was 0·35. How much of this variance can be associated with the measurable attributes of the occupations given in Statement XCVIII? Statement C is a scatter diagram cross-classifying average earnings of family heads with average persons per family for the 135 occupations.

C.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 135 OCCUPATIONS ACCORDING TO INTERVALS OF AVERAGE EARNINGS OF HEADS OF FAMILIES IN RELATION TO AVERAGE NUMBER OF PERSONS PER FAMILY, CANADA, 1931

Average Earnings of Head	Average Persons per Family																							
	3·25—3·34	3·35—3·44	3·45—3·54	3·55—3·64	3·65—3·74	3·75—3·84	3·85—3·94	3·95—4·04	4·05—4·14	4·15—4·24	4·25—4·34	4·35—4·44	4·45—4·54	4·55—4·64	4·65—4·74	4·75—4·84	4·85—4·94	4·95—5·04	5·05—5·14	5·15—5·24	5·25—5·34	Total
$ 450–$ 549									1						1		1					3
550– 649														1		1						2
650– 749	1										1		1		2		1					6
750– 849									4	2	2	1	2		1							12
850– 949				2		2	1	2	3	1	2	1		1								15
950– 1,049							2		1	3	1	1	1	1	1	1	1					13
1,050– 1,149							2	1	1	4	1		1	1		1	1					13
1,150– 1,249							3	1			2		1	1								8
1,250– 1,349						1	1	1		1	2											9
1,350– 1,449				1		1		1		1	2	1	2	3								12
1,450– 1,549					1	1		1	1													4
1,550– 1,649								2		3	1										1	7
1,650– 1,749							1	1	1	1		1										5
1,750– 1,849					1		1							1								3
1,850– 1,949								1														1
1,950– 2,049				1					2	1												4
2,050– 2,149					1		1															2
2,150– 2,249												1										1
2,250– 2,349			1					1					1									3
2,350– 2,449						2																2
2,450– 2,549							1															1
2,550– 2,649					2																	2
2,650– 2,749				1																		1
2,750– 2,849				1																		1
2,850– 2,949							1															1
2,950– 3,049								1														1
3,050– 3,149																						
3,150– 3,249																						
3,250– 3,349																						
3,350– 3,449																						
3,450– 3,549						2																2
3,550– 3,649						1																1
3,650– 3,749																						
3,750– 3,849									1													1
3,850– 3,949																						
3,950– 4,049							1															1
4,050– 4,149																						
4,150– 4,249								1														1
Total	1		1	6	5	10	15	14	15	17	14	6	9	9	5	3	4				1	135

The correlation between average earnings of head and average family size obtained from the above scatter diagram was −·41. It is interesting to observe that, while family size was always relatively small for the occupations in which earnings were highest, it varied from high to low in the occupations where earnings were low. This is more clearly illustrated in Statement CI.

CI.—MEAN OF AVERAGE PERSONS PER HOUSEHOLD AND STANDARD DEVIATION IN AVERAGES FOR NINE GROUPS OF 15 OCCUPATIONS EACH, ARRANGED IN ORDER OF DESCENDING EARNINGS, CANADA, 1931

Group	Mean of Average Persons per Family	Standard Deviation of Averages
1	3·82	0·16
2	4·01	0·31
3	4·15	0·34
4	4·20	0·33
5	4·19	0·28
6	4·38	0·28
7	4·23	0·26
8	4·12	0·30
9	4·43	0·41

The occupations were arranged in nine groups of 15 each on the basis of average earnings of heads of families. The first group contains the 15 occupations with heads receiving the highest average earnings, the second, the 15 occupations next in line, etc. Earnings of heads of families for occupations in the first group ranged from $2,404 to $4,189. The mean of the average sizes of families was considerably smaller in this group than in any of the lower earnings groups and the standard deviation of the averages about their group mean was also small as compared with the other groups. Wage-earners earning $2,400 and up who might be considered to belong to the upper class of wage-earners have small families, there being little variation between occupations. There is a strong indication of regulation of family size resulting in a family of standard size. This eliminates the very large family and explains why the birth rate is low for these classes and why they make little contribution to the natural increase of our population. The occupations in which average earnings of family heads exceeded $2,400 were as follows:—

Managers—metal products
Managers—building and construction
Railway officers—steam railways
Managers—retail stores
Managers—wholesale import and export houses; commercial agencies
Advertising agents
Officials—finance
Insurance officials
Stock and bond brokers
Authors, editors and journalists
Civil engineers and surveyors
Electrical engineers
Mechanical engineers
Professors and college principals

The mean of the average sizes of families is also small for the second group in Statement CI, including occupations in which earnings ranged from $1,720 up to $2,348. It was considerably higher than for the first group, however, due to the presence of three occupations in which average family size was fairly large, *viz.*, foremen and inspectors—steam railways—with 4·55 persons per family, locomotive engineers with 4·51 persons per family, and conductors—steam railways—with 4·41 persons per family. It is interesting that the standard deviation of the averages is large for this group. The trend between family size and earnings of heads would appear to be very irregular in the last 7 groups and the standard deviation in the average for each group is generally large. The conclusion is, therefore, that heads of families in the highest earnings classes tend to have small families of uniform size while families with heads in the lower earnings classes vary in size from large to small, depending on the occupation.

Correlation between Average Family Size and Urbanization of Occupation.—It has already been pointed out that the urban or rural location of the occupation will have an important bearing on the average size of the families of heads engaged in it. As a measure of urbanization we have taken the percentage of families with heads in each occupation in cities with population of 100,000 and over. The correlation between family size and urbanization of occupation as measured by this index was −·55 which may be considered highly significant in view of the fact that an even higher correlation would certainly result from the use of a less arbitrary index of urbanization. Occupations with a low representation of families in the seven cities with population above the 100,000 mark but with a large representation in the smaller towns and cities are undoubtedly more urban than those purely rural occupations, such as fishing, but our index does not distinguish them. Unfortunately, the data required for the construction of a more refined index were not available.

Correlation between Average Family Size and Percentage of Gainfully Occupied of British Racial Origin.—It is well known that workers of certain racial origins are found largely in certain occupations either through choice or necessity. Since family size varies with race, the racial origins of the heads of families engaged in each occupation will have a bearing on the average size of the family. The only data available for the racial content of each occupation were for the gainfully occupied males—no data were available for either family heads or wage-earners alone. To construct an index from these data for each occupation giving each race a predetermined weight would be a laborious task and would yield results of doubtful value. Consequently, family size was correlated with the percentage of the gainfully occupied of British racial origin. The British generally have small families and their presence in the occupation may also serve as an indication of the presence of other small family races. The coefficient of correlation between family size and percentage gainfully occupied of British racial origin was −·35. Racial content would not appear to contribute greatly to the variance in family size between occupations.

Effect of Delayed Earnings on Family Size.—Some occupations require a long and expensive training so that the wage-earner does not receive his maximum earnings until late in life, while in the less skilled occupations he may receive his maximum earnings as soon as he reaches manhood. Persons engaged in the former occupations will marry later than those in the latter occupations and be less able to support a family at the ages when children are usually born. It is difficult to measure the occupations for this attribute with census data. The method used has been to express the average earnings of the wage-earners between 25 and 34 years of age as a percentage of the average earnings of wage-earners between 45 and 54 years of age. For the sake of brevity we shall refer to this as the delayed-earnings index. The obvious drawback to the use of this device was that most of the wage-earners who train themselves for the skilled occupations do not belong to them at all between the ages of 25 and 34 and do not earn as much as those fortunate individuals who are able to enter the occupation at these ages. For example, the actuary is generally a *clerk* during his apprenticeship and earns his small salary while in this occupation. The coefficient of correlation between average family size and this index was ·30 and it will be seen later that the correlation becomes much lower when the other factors measured, particularly average earnings of heads of families at all ages, are partialled out. Are we then to conclude that family size in the occupations requiring skill and training is not appreciably decreased by the fact that wage-earners in these occupations earn their maximum after they have passed the ages when children are usually born or that our index of delayed earnings has not been valid? It is safe to conclude that the low correlation indicates both that the influence of delayed earnings is not very important and that the importance it does possess has not been fully measured.

Average Family Size and Age Distribution of Family Heads.—No data were available with regard to the age distribution of family heads by occupations. Consequently, it was not possible to standardize average persons per family in each occupation for ages of heads. However, data were available for the age distribution of male wage-earners in each occupation and the percentage of wage-earners between 35 and 54 years of age in each occupation will serve to indicate the percentage of family heads at the ages when their families are largest. The correlation between family size and percentage of wage-earners 35–54 was only 0·12. It must not be assumed, however, that the age distribution of the heads will not distort average family size in individual occupations.

CII.—SIMPLE CORRELATIONS BETWEEN PAIRS OF VARIABLES FOR 135 OCCUPATIONS, CANADA, 1931

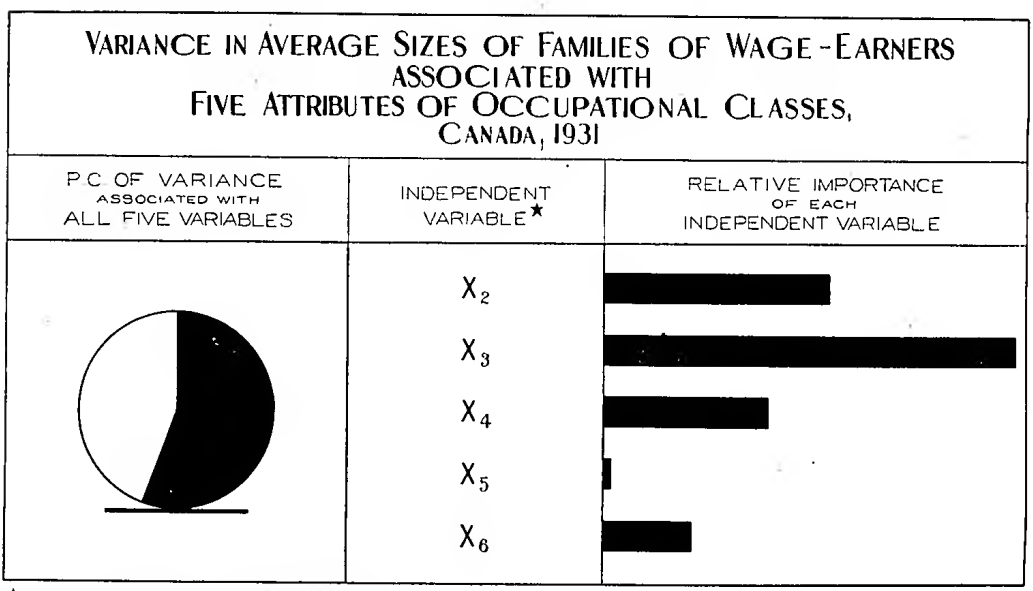
Variable	X_1 Average Persons per Family	X_2 Average Earnings of Heads	X_3 P.C. of Families Living in Cities of 100,000 and over	X_4 P.C. Gainfully Occupied of British Racial Origin	X_5 Delayed-Earnings Index	X_6 P.C. of Wage-Earners 35-54 Years of Age
X_1	-	-	-	-	-	-
X_2	−·41	-	-	-	-	-
X_3	−·55	+·16	-	-	-	-
X_4	−·35	+·49	+·03	-	-	-
X_5	+·30	−·50	−·06	−·38	-	-
X_6	+·12	+·53	−·11	+·41	−·40	-

The correlations between average persons per family and the five independent variables already discussed have been summarized in Statement CII. The intercorrelations between the independent variables have also been given and they will be seen to be high in some cases. The multiple coefficient of correlation between average family size and the five independent variables was ·75. Squaring this, we find that 56 p.c. of the total variance in family size was associated with these five variables and it cannot be assumed that the remaining 44 p.c. of the variance was entirely independent of the attributes measured by them, since, as has already been discussed, they do not measure the attributes with absolute accuracy. The distribution of the variance was as follows:—

DISTRIBUTION OF VARIANCE ASSOCIATED WITH THE FIVE INDEPENDENT VARIABLES

Independent Variable	P.C. of Variance Associated with Variable
Total	55·5
X_2 (average earnings of heads)	13·9
X_3 (percentage of families in cities 100,000 and over)	25·4
X_4 (percentage of gainfully occupied of British racial origin)	10·2
X_5 (delayed earnings)	0·5
X_6 (percentage of wage-earners 35-54 years of age)	5·5

The above figures are graphically presented in Chart 6.



★ Independent variables may be identified above.

Chart 6

Consequently, of the total variance in family size between occupations, 25 p.c. was associated with the urbanization of the occupation. Urbanization was approximately twice as important in causing variation in family size as either earnings of heads or percentage of the wage-earners of British racial origin. The age distribution of the wage-earners accounted for 10 p.c. of the total variance, much more than was indicated by the low simple coefficient of correlation, so that the true weight of the age factor is apparent only when the other variables are held constant. The delayed earnings factor is then of negligible importance.

Analysis of Variance in Family Size between Occupations and Rural and Urban Groups for Ontario.—The most significant relationship disclosed by the above study has been that between average family size and urbanization of occupation. The importance of urbanization in determining family size may now be dealt with in another way. Family data by occupation are available for rural and urban parts of the provinces of Ontario and Quebec, but since the presence of two very different and very important racial groups in the urban parts of the province of Quebec complicates investigation of family size when we are not able to hold the race factor constant, the following study has been confined to Ontario where the influence of race on family size from occupation to occupation is probably not great enough to appreciably vitiate the results. In Statement CIII the numbers of own children per family are given for 46 occupations by rural and urban groups. In order that the averages should be significant, only those occupations are shown with at least 25 families in each rural or urban group. The 46 occupations were selected on this basis. Occupations that include a large number of wage-earners and are distributed

CIII.—AVERAGE NUMBER OF OWN CHILDREN PER FAMILY WITH HEAD IN SELECTED OCCUPATIONS, RURAL AND URBAN BY SIZE GROUPS, ONTARIO, 1931

Occupation	Children per Family							
	Urban				Rural	Sum	Mean	Sum of Squares
	100,000 and over	30,000-100,000	1,000-30,000	Under 1,000				
Farm labourers	1·74	1·51	1·80	1·72	1·92	8·69	1·74	15·193
Bakers (mfg.)	1·86	1·62	1·97	1·98	2·02	9·45	1·89	17·966
Butchers and slaughterers (mfg.)	1·77	2·00	2·06	2·45	2·10	10·44	2·09	22·045
Foremen and overseers (wood products)	1·85	1·67	2·15	2·36	2·51	10·54	2·11	22·704
Sawyers	1·69	1·95	2·27	2·52	2·65	11·08	2·22	25·184
Cabinet and furniture makers	1·72	1·76	1·91	2·08	2·08	9·55	1·91	18·357
Compositors; printers, n.s.	1·63	1·62	1·62	2·39	1·78	9·04	1·81	16·786
Blacksmiths, hammermen, and forgemen	1·94	1·84	2·12	2·84	2·40	11·14	2·23	25·469
Machinists (mfg.)	1·68	1·76	1·94	1·79	2·15	9·32	1·86	17·510
Millwrights (mfg.)	1·99	2·20	2·46	2·96	2·98	12·59	2·52	32·494
Mechanics, n.e.s. (mfg.)	1·63	1·64	1·85	1·63	1·87	8·62	1·72	14·923
Boiler firemen	1·96	1·84	2·43	2·29	2·51	11·03	2·21	24·670
Stationary enginemen, n.e.s.	1·84	2·01	2·14	2·22	2·24	10·45	2·09	21·951
Foremen and overseers (building and construction)	1·98	1·83	2·21	2·39	2·22	10·63	2·13	22·794
Brick and stone masons	1·92	2·24	2·14	1·80	2·17	10·27	2·05	21·233
Carpenters	1·98	2·07	2·26	1·82	2·27	10·40	2·08	21·778
Electricians and wiremen	1·71	1·84	1·88	2·29	1·87	9·59	1·92	18·585
Painters, decorators, and glaziers	1·80	1·82	1·96	1·74	2·02	9·34	1·87	17·502
Plumbers, steam fitters, and gas fitters	1·85	1·83	2·10	2·54	2·11	10·43	2·09	22·085
Sheet metal workers and tinsmiths	1·79	1·64	1·89	2·69	2·02	10·03	2·01	20·782
Foremen, inspectors (steam railway)	1·98	1·91	2·17	2·74	2·62	11·42	2·28	26·649
Agents—ticket and station (railway)	1·55	1·44	1·72	1·86	2·13	8·70	1·74	15·431
Switchmen, signalmen, and flagmen	1·83	1·87	2·21	2·62	2·45	10·98	2·20	24·597
Section foremen, sectionmen; trackmen	1·97	2·13	2·49	2·43	2·48	11·50	2·30	26·673
Truck drivers	1·77	1·78	1·94	1·82	1·96	9·27	1·85	17·219
Teamsters, draymen, carriage drivers	1·99	1·89	2·31	2·17	2·40	10·76	2·15	23·337
Postmen and mail carriers	2·06	1·92	1·86	1·64	1·99	9·47	1·89	18·039
Telegraph operators	1·53	1·39	1·65	1·51	1·96	8·04	1·61	13·117
Linemen and cablemen	1·75	1·71	2·04	1·24	1·80	8·54	1·71	14·926
Managers (retail stores)	1·51	1·55	1·67	1·22	1·65	7·60	1·52	11·682
Managers (wholesale trade)	1·08	1·49	1·64	1·55	1·67	7·43	1·49	11·268
Inspectors, gaugers, and samplers	1·76	1·63	1·59	1·38	1·78	8·14	1·63	13·355
Sales agents, canvassers, demonstrators	1·57	1·42	1·75	1·31	1·75	7·80	1·56	12·322
Salesmen	1·45	1·47	1·60	1·60	1·73	7·85	1·57	12·376
Officials—finance	1·40	1·31	1·66	1·33	1·52	7·22	1·44	10·511
Insurance agents	1·56	1·64	1·71	1·59	1·57	8·07	1·61	13·040

[1]Not agricultural, mining, or logging.
n.s.—not specified; n.e.s.—not elsewhere specified.

CIII.—AVERAGE NUMBER OF OWN CHILDREN PER FAMILY WITH HEAD IN SELECTED OCCUPATIONS, RURAL AND URBAN BY SIZE GROUPS, ONTARIO, 1931—Con.

Occupation	Children per Family							
	Urban				Rural	Sum	Mean	Sum of Squares
	100,000 and over	30,000-100,000	1,000-30,000	Under 1,000				
Public service officials	1·55	1·47	1·56	1·55	1·70	7·83	1·57	12·290
Police and detectives	1·88	1·58	1·77	1·76	1·95	8·94	1·79	16·064
Clergymen	1·87	1·79	1·81	1·66	1·68	8·81	1·76	15·555
Teachers—school	1·38	1·24	1·46	1·23	1·46	6·77	1·35	9·218
Accountants and auditors	1·39	1·41	1·50	1·66	1·53	7·49	1·50	11·267
Janitors and sextons	1·49	1·68	1·73	1·71	1·82	8·43	1·69	14·272
Watchmen and caretakers, n.e.s.	1·73	1·82	1·93	1·90	1·93	9·31	1·86	17·365
Bookkeepers and cashiers	1·39	1·24	1·41	1·38	1·55	6·97	1·39	9·765
Other clerical (office clerks)	1·54	1·48	1·57	1·57	1·63	7·79	1·56	12·149
Labourers and unskilled workers[1]	2·01	1·97	2·24	2·24	2·32	10·78	2·16	23·339
Sums	79·32	78·92	88·15	89·17	92·98	428·54	-	-
Means	1·72	1·72	1·92	1·94	2·02	-	-	-
Sums of squares	138·8870	138·0762	172·4747	183·0031	193·4018	-	-	825·84

throughout the rural and urban divisions are therefore dealt with and, consequently, small occupations and those purely rural or purely urban have been excluded. Children per family range from 2·98 in families of rural millwrights to 1·24 in families of school teachers, cashiers, and bookkeepers living in cities with populations of 30,000 and less than 100,000. The variance in average children per family is, obviously, partly due to occupation and partly to urbanization. In addition, there is a variance due to sampling which would occur even in the case of homogeneous groups of families. In order to distribute the total variance amongst the above three factors, use is made of a method of statistical analysis developed by R. A. Fisher which has been applied successfully in biological research.

In the last three columns of Statement CIII the sums, means, and sums of squares of the average persons per family in each row are given. Similarly, the bottom rows contain the sums, means and sums of squares for each column. The totals given in the lower right-hand corner may be checked by addition of both submarginal rows and columns.

CIV.—ANALYSIS OF VARIANCE IN NUMBER OF OWN CHILDREN PER FAMILY, ONTARIO, 1931

Item	Degrees of Freedom	Variance	Mean Variance
Between means of occupations	45	17·79	0·40
Between means of rural and urban groups	4	3·43	0·86
Sampling error	180	6·16	0·03
Total	229	27·38	

Correction term—

$$\frac{(428\cdot54)^2}{230} = 798\cdot46$$

Sums of squares between means of occupations—

$$\frac{(8\cdot69)^2 + (9\cdot45)^2 + \ldots\ldots\ldots\ldots + (10\cdot78)^2}{5} = \begin{array}{r} 816\cdot25 \\ -798\cdot46 \\ \hline 17\cdot79 \end{array}$$

Sums of squares between means of rural and urban groups—

$$\frac{(79\cdot32)^2 + \ldots\ldots\ldots\ldots + (92\cdot98)^2}{46} = \begin{array}{r} 801\cdot89 \\ -798\cdot46 \\ \hline 3\cdot43 \end{array}$$

Total variance $\begin{array}{r} 825\cdot84 \\ -798\cdot46 \\ \hline 27\cdot38 \end{array}$

The total variance may be obtained by subtracting from the total sums of squares 825·84 the correction term 798·46. The difference is 27·38.

Each calculation has been given in detail in order that the reader may follow the procedure step by step. A feature of the method of analysis of variance is the additive nature of both the degrees of freedom and the variance. Thus the variance due to sampling may be obtained by subtracting from the total variance the variance between means of occupations and between means of rural and urban groups.

The concept of degrees of freedom used in obtaining mean variance may be new to the reader. Throughout this monograph in calculating mean variance for frequency distributions the sums of the squares of the deviations about the mean have been divided by the total frequency which is generally symbolized by "*n*." It is obvious that in calculating a mean from a small number of observations it is not the true mean which is obtained but the mean of a sample that will differ from the mean of the universe. Now the sum of the squared deviations of a frequency distribution is a minimum when the deviations are taken about the mean of the distribution. Consequently, the sum of the squared deviations about the mean of the universe will be greater than that of the squared deviations about the mean of the sample so that there is a constant tendency to underestimate the mean variance of frequency distributions. In order to avoid this error we may divide the sum of the squared deviations, not by the number of observations "*n*", but by the number of degrees of freedom, $n - 1$. It is obvious that this will increase the mean variance appreciably only when n is small.

This is consistent with the principle that as n increases, the mean of the sample becomes a closer approximation to the mean of the universe.

Returning to Statement CIV, it will be seen that the mean variances between means of occupations and between means of rural and urban groups are each many times the mean variance due to chance variation. Consequently, it is safe to assume without resorting to formal proof that both variances are highly significant. The mean variance between means of rural and urban groups is more than twice the mean variance between means of occupations. If we consider occupation a measure of social class and urbanization a measure of environment in so far as it can be dissociated from class, we must conclude that physical environment has a greater influence on family size than social class.

The unweighted means of the averages for children per family for each rural and urban group, given at the foot of Statement CIV, provide an index of family size in which social class, as measured by occupation, is held constant. Each occupational class is given the same weight regardless of its actual representation. Since the means for the urban "100,000 and over" group and the urban "30,000-100,000" group are equal it would seem that families are not larger in the cities of medium size than in the three big cities. They are, however, much larger in the urban "1,000-30,000" group. There is no significant difference between the urban "1,000-30,000" group and the urban "under 1,000" group, but rural families are considerably larger than any of the urban families. The population may, therefore, be divided into three rural and urban groups in which family size differs notably, *viz.*, the urban "30,000 and over"; the urban "under 30,000" and the rural. One might say that there is an average city family, an average town family and an average rural family. That the city family is smallest and the rural family is largest can be attributed to differential fertility since children stay at home longest in the large cities.

CV.—FAMILY SIZE, RURAL AND URBAN BY SIZE GROUPS, ONTARIO, 1931

Locality	Own Children per Family Living at Home	Estimated Size of Completed Family	Difference between Size of Completed Family and Size Required for Perpetuation	Increase per 1,000
Urban 30,000 and over	1·72	2·98	0·13	1·7
Urban under 30,000	1·93	3·34	0·51	6·6
Rural	2·02	3·49	0·66	8·5

The importanee of small differenees in family size for various seetions of the population may be realized from examination of the above statement. It was pointed out in Chapter VIII, page 96, that the average eompleted family was 1·73 times as large as the average number of children living at home. To obtain the sizes given in the second eolumn of Statement CV the averages of the first column were multiplied by this factor. It was also estimated that to perpetuate herself, her husband, and their unmarried eontemporaries the average married woman living through the child-bearing period should bear 2·83 children. According to our figures, the wives of wage-earners in the large eities of Ontario were barely doing this in 1931. In fact, it is quite safe to say that they are not now perpetuating themselves, since the averages given in Statement CV have resulted from births during several pre-eensal deeades and the birth rate has since been steadily deelining. The low average sizes of their families and the decline in the birth rate during the period while the families have developed indieates that large seetions (not necessarily geographieal) of the population of Canada are not to-day maintaining their numbers, any natural inerease being the result of an age distribution more favourable to births than to deaths. In eonstructing a rate of natural increase based on family size, we eliminate the influenee of age distribution exeept in so far as family size is determined by the age distribution of the heads of families. A erude index of natural inerease may be obtained from the following formula:—

$$\text{Rate of natural increase per 1,000} = \frac{\text{Average size of completed family} - 2\cdot83}{2\cdot83} \times \frac{1{,}000}{28\cdot38}.$$

This rate must not, of course, be used in any refined ealculations due to its many obvious deficieneies. In the first place, the ealculation of the average size of the family is a very rough one, particularly in view of the fact that the data on the age distribution of family heads are insufficient to permit standardization. The length of a generation, 28·38 years, has been obtained from the median age of Canadian mothers for 1931. It is apparent that this median will vary from year to year and also that length of generation will differ considerably for each seetion of the population. It would obviously be impossible to determine an accurate measure of length of generation for each section of the population espeeially in view of the continuous movement of persons from seetion to seetion. The rate, however, is useful as an aid in visualizing the importanee of differenees in average size of family and has been introduced for this reason.

It will be seen from the fourth eolumn of Statement CV that the rate of inerease among rural wage-earners is five times that among urban-over-30,000 wage-earners. It is partieularly important that the "town" rate of increase is nearly four times the "city" rate—an argument in favour of the decentralization of industry. Another interpretation of the figures in Statement CV might be that families are smallest in the large cities because birth control knowledge is more widely disseminated and that eventually family size in the small towns and rural districts will approach that in the large cities. If this is the case the rate of natural increase of Canada's population will decrease very rapidly and an actual decline will set in at an early date. However, it is probable that the more widespread practice of birth control in the large cities is due largely to the difficulty of supporting large families. Decentralization of industry under these eireumstances might tend to inerease family size and the rate of inerease of the population.

Comparison of Census and Vital Statistics Data on Family Size by Occupation of Head.—It is always interesting to compare eensus data with similar data gathered annually, such as the vital statistics. A speeial tabulation by occupation of father has been made of the average number of living children born to the mothers of 1931. It is not possible to obtain so detailed an occupational classification from the vital statistics reports as from the eensus reports due to their incompleteness and the fact that they apply to a considerably smaller universe, *viz.*, the births of 1931. There were, however, 52 oeeupations for which both census and vital statistics data were available. The average number of dependents per census family* and the

* The census family as used above includes children and dependents living at home at the time of the census.

average number of living children per mother for these have been given in Statement CVI. Dependents per family include guardianship children and other dependents but their numbers are too small to appreciably alter the averages. The linear coefficient of correlation between the two averages for the 52 occupations was ·75. The regression equation relating the two variables was $X_1 = 1{,}035\ X_2 + 0{\cdot}983$ where X_1 represents the size of the census family and X_2 the size of the vital statistics family. The average numbers of dependents per census family calculated from this equation have been given in the third column of Statement CVI. The fourth column gives the differences between the actual and calculated sizes of census families. The vital statistics averages have been adjusted for the ages of mothers and are superior to the census averages in this respect. Consequently, when the age distribution of the heads of census families is favourable to large average family size, one should expect a positive difference between the average size of the census family and the average calculated on the basis of the vital statistics data and

CVI.—COMPARISON OF AVERAGE NUMBER OF DEPENDENTS PER CENSUS FAMILY AND AVERAGE BIRTH ORDER FOR 52 OCCUPATIONS, CANADA, 1931

Occupation	Average Dependents per Family	Average of Living Children Born to Mothers	Dependents per Family (calculated)	Difference between Actual and Calculated No. of Dependents	P.C. of Wage-Earners between 35 and 54 Years of Age
Section foremen, sectionmen; trackmen	2·88	3·83	2·95	−0·07	48·7
Fishermen	2·72	4·00	3·12	−0·40	41·2
Labourers (mining)	2·71	3·92	3·04	−0·33	36·2
Carpenters	2·69	3·56	2·67	+0·02	53·6
Stone cutters, dressers, and carvers	2·62	3·40	2·50	+0·12	47·8
Inspectors, graders, sealers (wood products)	2·59	3·32	2·42	+0·17	46·3
Foremen and overseers (building and construction)	2·59	3·11	2·20	+0·39	60·5
Labourers and unskilled workers[1]	2·56	4·03	3·15	−0·59	40·5
Blacksmiths, hammermen, and forgemen	2·53	3·77	2·89	−0·36	51·6
Locomotive engineers	2·51	3·24	2·34	+0·17	77·2
Cutters (leather and leather products)	2·48	3·23	2·33	+0·15	39·0
Locomotive firemen	2·47	3·01	2·10	+0·37	55·2
Boilermakers, platers, and riveters (mfg.)	2·45	3·33	2·43	+0·02	56·8
Car builders and repairers (mfg.)	2·45	3·00	2·09	+0·36	63·6
Conductors (steam railway)	2·41	2·87	1·95	+0·46	75·7
Moulders, coremakers, and casters	2·41	3·20	2·30	+0·11	55·1
Butter and cheese makers	2·40	3·90	3·02	−0·62	30·3
Brick and stone masons	2·37	3·35	2·45	−0·08	49·1
Firemen (fire department)	2·37	3·18	2·27	+0·10	53·2
Plumbers, steam fitters, and gas fitters	2·32	3·22	2·32	-	47·8
Tailors (mfg.)	2·31	2·85	1·93	+0·38	52·1
Captains, mates, and pilots	2·30	2·86	1·94	+0·36	50·7
Plasterers and lathers	2·28	3·35	2·45	−0·17	46·7
Postmen and mail carriers	2·27	3·22	2·32	−0·05	55·2
Stationary engineers, n.e.s.	2·26	3·02	2·11	+0·15	55·7
Switchmen, signalmen, and flagmen	2·26	2·93	2·02	+0·24	52·0
Police and detectives	2·21	3·00	2·09	+0·12	51·2
Agents—ticket and station (railway)	2·21	3·16	2·25	−0·04	61·3
Butchers and slaughterers (mfg.)	2·19	3·45	2·55	−0·36	41·1
Painters, decorators, and glaziers	2·18	3·34	2·44	−0·26	44·8
Sheet metal workers and tinsmiths	2·17	3·19	2·29	−0·12	43·8
Seamen, sailors, and deckhands	2·17	3·17	2·26	−0·09	49·2
Electricians and wiremen	2·16	3·21	2·31	−0·15	40·0
Cooks	2·14	3·10	2·19	−0·05	61·0
Farm labourers	2·13	3·44	2·54	−0·41	28·1
Structural iron workers and steel erectors	2·08	3·10	2·19	−0·11	43·1
Commercial travellers	2·07	2·96	2·05	+0·02	59·1
Public service officials	2·03	2·93	2·02	+0·01	57·6
Managers (building and construction)	2·02	3·17	2·26	−0·24	67·7
Electric and oxy-acetylene welders (mfg.)	2·02	2·96	2·05	−0·03	37·0
Other ranks—army, navy and air force	2·01	2·93	2·02	−0·01	33·9
Insurance agents	2·00	2·85	1·93	+0·07	67·6
Telegraph and telephone operators	1·96	2·88	1·96	-	40·6
Firemen and cablemen	1·95	2·74	1·82	+0·13	37·9
Barbers, hairdressers, manicurists	1·94	3·10	2·19	−0·25	40·2
Upholsterers	1·89	2·91	2·00	−0·11	36·6
Clergymen	1·89	2·22	1·28	+0·61	68·8
Managers (retail stores)	1·84	3·09	2·18	−0·34	53·6
Salesmen	1·79	2·56	1·63	−0·16	37·9
Managers (wholesale trade)	1·78	2·61	1·68	+0·10	67·4
Authors, editors, and journalists	1·69	2·36	1·43	+0·26	42·8
Musicians and music teachers	1·59	2·34	1·41	+0·18	37·1

[1]Not agricultural, mining, or logging.
n.e.s.—not elsewhere specified.

a negative difference when the age distribution of heads is unfavourable. There was a positive correlation of ·50 between the differences between the actual and calculated sizes of census families and the percentages of wage-earners between 35 and 54 years of age in each occupation, indicating that 25 p.c. of the variance of the former was associated with the favourableness of the ages of the heads of families to large average family size. When allowance is made for this factor, the correlation between the number of dependents per census family and the average number of living children born to the mothers of 1931 is increased from ·75 to ·82.

Considering the various reasons why the vital statistics data are not strictly comparable with the census data, it is surprising that the correlation is so high. It points to the reliability of vital statistics data as a source of information for studies in differential fertility. It also indicates that differentials in census family size from occupation to occupation are largely the result of differential fertility since they correlate highly with the vital statistics differentials.

Family Size by Occupation of Head, by Provinces.—Study of family size by occupation of head by provinces is rendered difficult on account of the small number of wage-earners in each occupation. For example, few occupations in Prince Edward Island include a sufficient number of wage-earning heads of families to make the average sizes of their families significant. In Statement CVII the average persons per family is given for 42 of the largest and most homogeneous occupation groups in the remaining eight provinces. The averages are omitted for several occupations in the Prairie Provinces where the number of heads of families was less than 25. The unweighted means of the eight provincial averages for each occupation are given in the first column and the occupations ranked in descending order, according to family size. For the sake of brevity, these means will be referred to as the Canada averages. At the foot of Statement CVII the coefficients of dispersion of the averages for each province are given. Family size appears to vary most from occupation to occupation in Quebec and New Brunswick, clearly the result of differential racial content in occupations.

In Statement CVII the occupations are ranked according to decreasing family size for each province. It is noteworthy that section foremen, sectionmen and trackmen have the largest families in five of the eight provinces as well as for Canada, while fishermen, ranking second for Canada, also rank second in five provinces. In addition, in the provinces where these two occupations do not rank first and second, respectively, in family size they rank fairly high. It is evident that a comparatively large average family is peculiar to certain occupations in every province. How well an occupation maintains its rank in family size from province to province can be measured by the mean of the squares of the rank differences between the Canada average and the provincial averages. This measure may be termed rank variance. The rank variance for each occupation is given in the last column of Statement CVII from which it may be seen that it is very small for some occupations and very high for others. The two occupations which have a uniformly high ranking in family size have already been discussed. Janitors and sextons, compositors and printers, professional engineers, salesmen, accountants and auditors, and clerks have a uniformly low ranking indicating that families with heads in these occupations are comparatively small in every province. Rank variance is largest for three occupations, *viz.*, clergymen, miners, and cooks. While clergymen rank eleventh and fourteenth in the sizes of their families in Alberta and British Columbia, respectively, they rank forty-first, forty-second and forty-second in Nova Scotia, New Brunswick and Quebec, respectively. In the three latter provinces average family size is increased by the inclusion of a large French-Canadian element in the population. Due to the fact that the great majority of French-Canadians are Roman Catholic, there is practically no French-Canadian representation among the clergymen, and they will consequently rank very low in the average family size in these provinces. Allowing for this factor it is evident that clergymen tend to have larger families than the other professional classes. In Statement XCVIII, page 106, the average size of the families of coal miners for Canada was given as 4·87 and the average size of the families of miners engaged in other types of mining as 4·23. Coal miners have considerably larger families than other miners with the result that, in the provinces where they are mostly coal miners, miners will rank much higher in family size than in the other provinces.

The cause of the high rank variance in the case of cooks is not so apparent but it probably is a lack of homogeneity in the occupational class.

CVII.—AVERAGE SIZE OF NORMAL FAMILIES WITH WAGE-EARNER HEADS FOR 42 SELECTED OCCUPATIONS OF HEAD, RANKED ACCORDING TO DECREASING SIZE OF MEAN OF PROVINCIAL AVERAGES, CANADA[1] AND PROVINCES, 1931

Occupation Ranked According to Decreasing Size of Mean of Averages	Unweighted Mean of Provincial Averages	Average Persons per Family								
		Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Rank Variance
Section foremen, sectionmen; trackmen	4·93	5·28	5·28	5·86	4·50	4·91	4·77	4·46	4·36	-
Fishermen	4·84	5·07	5·49	5·21	4·30	4·78	-	-	4·16	-
Lumbermen	4·68	4·85	5·23	5·41	4·46	4·60	-	4·41	3·81	-
Boilermakers, platers, and riveters	4·60	5·13	5·55	4·80	4·14	4·51	4·75	4·11	3·88	-
Teamsters, draymen, carriage drivers	4·57	4·75	4·80	4·91	4·25	4·64	4·82	4·41	4·01	-
Carpenters	4·57	4·67	5·06	5·44	4·21	4·43	4·59	4·22	3·94	-
Blacksmiths, hammermen, and forgemen	4·56	4·98	5·34	5·17	4·17	4·30	4·42	4·26	3·87	-
Locomotive engineers	4·55	4·86	5·11	5·13	4·31	4·43	4·34	4·25	3·98	-
Labourers (mining)	4·54	5·14	4·83	5·38	4·31	4·15	4·13	4·40	3·96	-
Miners	4·51	5·34	5·25	4·90	4·13	3·44	4·62	4·28	4·15	-
Labourers and unskilled workers[4]	4·50	4·62	4·92	5·01	4·23	4·45	4·59	4·23	3·97	-
Locomotive firemen	4·46	4·89	5·34	5·27	4·37	4·11	4·09	3·91	3·69	-
Brakemen	4·42	5·01	4·93	5·33	4·22	4·02	4·07	3·91	3·85	-
Conductors (steam railway)	4·41	4·88	4·76	5·39	4·21	3·90	4·21	3·93	3·96	-
Moulders, coremakers, and casters	4·38	4·68	4·94	4·90	4·26	4·38	-	3·72	3·81	-
Brick and stone masons	4·32	4·43	5·06	4·93	4·11	4·15	4·11	4·07	3·71	-
Plumbers, steam fitters, and gas fitters	4·28	4·70	4·74	4·81	4·04	4·16	4·21	3·85	3·76	-
Watchmen and caretakers	4·28	4·40	4·82	4·89	3·92	4·11	4·49	4·06	3·57	-
Conductors and motormen (street car)	4·24	4·55	4·29	4·90	4·04	4·24	4·08	4·09	3·73	-
Farm labourers	4·20	4·44	4·61	4·61	3·92	4·21	4·18	3·88	3·78	-
Bakers	4·20	4·45	4·68	4·86	3·93	4·11	3·92	3·94	3·67	-
Butchers and slaughterers (mfg.)	4·19	4·68	4·12	4·65	4·01	4·20	4·41	3·82	3·65	-
Machinists (mfg.)	4·19	4·66	4·65	4·72	3·91	3·91	4·17	3·91	3·57	-
Cooks	4·19	4·77	5·08	4·29	3·91	3·82	4·16	3·72	3·73	-
Agents—ticket and station[2]	4·18	4·18	4·30	5·17	3·92	4·00	4·07	4·13	3·67	-
Police and detectives	4·17	4·46	4·51	4·81	3·89	3·99	4·00	3·91	3·82	-
Tailors (mfg.)	4·16	4·69	4·23	4·56	4·12	4·07	3·98	3·80	3·84	-
Painters, decorators, and glaziers	4·16	4·60	4·53	4·57	3·93	4·00	4·03	3·97	3·65	-
Truck drivers	4·11	4·25	4·50	4·45	3·91	4·00	4·13	3·83	3·81	-
Seamen, sailors, and deckhands	4·11	4·36	4·21	4·73	3·68	-	-	-	3·55	-
Electricians and wiremen	4·09	4·64	4·43	4·60	3·87	3·92	3·87	3·76	3·60	-
Mechanics, n.e.s. (mfg.)	4·05	4·27	4·35	4·68	3·80	3·90	3·93	3·83	3·64	-
Shippers (warehousing and storage)	4·04	4·69	4·07	4·48	3·73	3·99	4·02	3·72	3·59	-
Clergymen	3·91	3·71	3·71	3·91	3·83	4·06	4·08	4·13	3·84	-
Commercial travellers	3·91	4·02	3·85	4·57	3·61	3·91	3·94	3·90	3·46	-
Janitors and sextons	3·89	4·18	4·18	4·05	3·68	3·75	3·97	3·84	3·45	-
Compositors; printers, n.s.	3·89	4·29	3·98	4·48	3·71	3·80	3·65	3·60	3·59	-
Engineers[3] (professional service)	3·88	4·19	4·17	4·06	3·64	3·82	3·82	3·80	3·57	-
Salesmen	3·84	4·03	3·92	4·28	3·59	3·77	3·91	3·72	3·52	-
Teachers—school	3·78	3·70	3·83	4·26	3·46	4·00	3·66	3·73	3·59	-
Accountants and auditors	3·75	3·78	3·89	4·33	3·50	3·60	3·69	3·64	3·56	-
Other clerical (office clerks)	3·74	4·00	3·93	4·10	3·58	3·61	3·66	3·59	3·48	-
Unweighted mean for all occupations	4·24	4·56	4·62	4·78	3·98	4·10	4·14	3·96	3·75	-
Standard deviation	0·35	0·44	0·56	0·42	0·28	0·28	0·35	0·24	0·26	-
Coefficient of dispersion	0·08	0·10	0·12	0·11	0·07	0·07	0·09	0·06	0·07	-

RANK OF OCCUPATION BY FAMILY SIZE

Section foremen, sectionmen; trackmen	1	2	5	1	1	1	4	1	1	3
Fishermen	2	5	2	8	6	2	2	2	2	8
Lumbermen	3	11	7	3	2	4	3	4	17	31
Boilermakers, platers, and riveters	4	4	1	22	14	5	5	13	10	69
Teamsters, draymen, carriage drivers	5	13	17	14	8	3	1	3	4	40
Carpenters	6	19	10	2	11	8	7	10	9	32
Blacksmiths, hammermen, and forgemen	7	7	3	9	13	10	10	7	11	11

[1]Exclusive of Prince Edward Island.
[2]Railway transportation.
[3]Exclusive of mining engineers.
[4]Not agricultural, mining, or logging.
n.s.—not specified. n.e.s.—not elsewhere specified.

CVII.—AVERAGE SIZE OF NORMAL FAMILIES WITH WAGE-EARNER HEADS FOR 42 SELECTED OCCUPATIONS OF HEAD, RANKED ACCORDING TO DECREASING SIZE OF MEAN OF PROVINCIAL AVERAGES, CANADA[1] AND PROVINCES, 1931—Con.

Occupation Ranked According to Decreasing Size of Mean of Averages	Un-Weighted Mean of Provincial Averages	Average Persons per Family								
		Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Rank Vnrianeo
Locomotive engineers	8	10	8	11	4	7	12	8	5	7
Labourers (mining)	9	3	15	5	5	15	20	5	7	35
Miners	10	1	6	15	15	42	6	6	3	157
Labourers and unskilled workers[4]	11	22	14	12	9	6	8	9	6	25
Locomotive firemen	12	8	4	7	3	19	22	21	24	70
Brakemen	13	6	13	6	10	22	26	20	12	51
Conductors (steam railway)	14	9	18	4	12	33	14	19	8	71
Moulders, coremakers, and casters	15	17	12	17	7	9	15	37	18	76
Brick and stone masons	16	28	11	13	17	16	21	15	23	32
Plumbers, steam fitters, and gas fitters	17	14	19	20	18	14	13	26	20	17
Watchmen and caretakers	18	29	16	18	25	18	9	16	36	73
Conductors and motormen (street car)	19	24	29	16	19	11	23	14	22	31
Farm labourers	20	27	22	27	23	12	16	25	19	27
Bakers	21	26	20	19	21	17	35	18	25	33
Butchers and slaughterers (mfg.)	22	18	34	26	20	13	11	31	27	61
Machinists (mfg.)	23	20	21	24	26	31	17	23	35	33
Cooks	24	12	9	36	27	35	18	36	21	104
Agents—ticket and station[2]	25	35	28	10	24	23	25	12	26	67
Police and detectives	26	25	24	21	29	27	29	22	15	23
Tailors (mfg.)	27	15	30	31	16	20	31	33	13	73
Painters, decorators, and glaziers	28	23	23	29	22	24	27	17	28	28
Truck drivers	29	33	25	34	28	26	19	29	16	42
Seamen, sailors, and deckhands	30	30	31	23	36	30	30	30	37	17
Electricians and wiremen	31	21	26	28	30	29	37	34	30	23
Mechanics, n.e.s. (mfg.)	32	32	27	25	32	34	34	28	29	13
Shippers (warehousing and storage)	33	16	35	33	33	28	28	39	32	48
Clergymen	34	41	42	42	31	21	24	11	14	173
Commercial travellers	35	38	40	30	38	32	33	24	41	30
Janitors and sextons	36	36	32	41	35	39	32	27	42	23
Compositors; printers, n.s.	37	31	36	32	34	37	42	41	33	16
Engineers[3] (professional service)	38	34	33	40	37	36	38	32	34	13
Salesmen	39	37	38	37	39	38	36	38	39	3
Teachers—school	40	42	41	38	42	25	40	35	31	43
Accountants and auditors	41	40	39	35	41	41	39	40	38	7
Other clerical (office clerks)	42	39	37	39	40	40	41	42	40	7

CVIII.—RANK OF PROVINCES ACCORDING TO FAMILY SIZE FOR 42 OCCUPATIONS, 1931

Rank	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1	8	8	25	-	-	-	1	-
2	12	16	11	-	1	2	-	-
3	18	15	5	-	1	3	-	-
4	2	-	1	5	9	22	3	-
5	1	1	-	4	22	7	6	1
6	-	1	-	16	7	6	10	2
7	-	1	-	15	-	2	19	5
8	1	-	-	2	2	-	3	34

For each occupation the provinces have been ranked according to decreasing family size and Statement CVIII shows the number of occupations for which each province has given rank. For 34 of the 42 occupations British Columbia had the smallest average family of any of the provinces and for 5 occupations it had the second smallest average family, indicating that the small size of the average family in British Columbia cannot be explained on an occupational basis since small families are peculiar to all occupations. Each province appears to have a modal rank, the modal tendency being strongest in Quebec where families are largest for 25 occupations and in British Columbia. The regional differentiation in family size is consequently independent of social class and would appear to apply to the majority of individual classes with a few notable exceptions, such as clergymen.

In Table 11, Part II, page 196, the average earnings of heads of families, the average number of children earning per family and the earnings per child, by occupation of head have been given for each province. The following linear coefficients of correlation between average earnings of heads of families and average earnings of their children were obtained:—

Nova Scotia	·71	Manitoba	·76
New Brunswick	·88	Saskatchewan	·64
Quebec	·84	Alberta	·69
Ontario	·84	British Columbia	·68

The correlations were high in every province particularly in the East. It has already been observed in the first pages of the chapter (Statement XCIV, page 103) that average earnings per wage-earning child steadily increase with increasing earnings of heads of families. Evidently, earnings of children tend to be determined by the earnings of their parents. It was pointed out before that children of heads of families in the higher earnings classes do not accept employment so readily as those of the poorer heads since they are able to wait for a remunerative position. Location possibly accounts for the correlation to some extent since earnings of father and son, living and working in the same place, will reflect the general level of earnings in the locality. The importance of this factor is reduced as we take finer geographical groups. Children, particularly those living at home, probably tend to follow their father's occupation and this would naturally cause a correlation between earnings of father and son. It is interesting to observe that the correlations are higher in the older provinces and the question may be raised as to whether Canadian wage-earners are being progressively regimented into an occupational caste system as the nation's economic system becomes more static.

CIX.—RANK CORRELATIONS BETWEEN VARIABLES, FOR 42 OCCUPATIONS, YEAR ENDED JUNE 1, 1931

Variable	x_1 Earnings of Head	x_2 Smallness of Family	x_3 Earnings of Children	x_4 P.C. of Children 15 Years of Age and over at School	x_5 Children Gainfully Occupied	x_6 Children Gainfully Occupied as P.C. of Children 15 Years of Age and over
Quebec—						
x_1	-	-	-	-	-	-
x_2	+·29	-	-	-	-	-
x_3	+·81	+·60	-	-	-	-
x_4	+·88	+·37	+·72	-	-	-
x_5	−·28	−·29	−·08	−·43	-	-
x_6	−·62	+·05	−·28	−·76	+·59	-
Ontario—						
x_1	-	-	-	-	-	-
x_2	+·46	-	-	-	-	-
x_3	+·84	+·69	-	-	-	-
x_4	+·89	+·42	+·71	-	-	-
x_5	−·46	−·39	−·22	−·60	-	-
x_6	−·67	−·12	−·36	−·80	+·73	-

In Tables 12 and 13, Part II, pages 198, 199, occupations in the provinces of Quebec and Ontario are ranked according to six variables. The rank coefficients of correlation between these variables are given in Statement CIX. The rank coefficient of correlation does not differ greatly in value from the Pearsonian coefficient and, once the occupations are ranked for each variable, it is very easy to compute. It will be noticed that the correlations are generally somewhat higher in Ontario than in Quebec where they are probably disturbed by the racial factor but that they all follow the same trend in each province.

Correlations which possess particular interest are discussed below, one by one, commencing with those in the first column.

r_{12}, the correlation between earnings of head and smallness of family was ·29 for Quebec and ·46 for Ontario. This compares with a Pearsonian coefficient of ·41 for 135 occupations for Canada.

r_{13}, the correlation between earnings of head and earnings per wage-earning child living at home was ·81 for Quebec and ·84 for Ontario. It is interesting to compare these correlations with the Pearsonian correlations given on page 137.

	Rank Coefficient	Pearsonian Coefficient
Quebec	·81	·84
Ontario	·84	·84

The rank coefficient generally closely approximates the Pearsonian coefficient.

r_{14}, the correlation between earnings of head and percentage of children 15 years of age and over at school was ·88 for Quebec and ·89 for Ontario. These correlations are very high and indicate that family heads in the higher earning classes given their children a much more complete education than the poorer heads. The children of wage-earners in the higher earnings class were receiving a better education and were able to secure much more remunerative employment in 1930-31 than the children of those in the lower earnings classes. There were evidently two choices open to the former children—they could continue at school or go to work and they only worked when the pay was good.

r_{15}, the correlation between earnings of head and children per family gainfully occupied was −·28 for Quebec and −·46 for Ontario. That the negative correlation was not higher was due to the fact that the wage-earners with larger earnings were older and had older children who were available for employment in greater numbers. This tended to counteract the higher proportion of older children of the poorer heads who were gainfully occupied.

r_{16}, the correlation between earnings of head and children per family gainfully occupied as percentage of the number of children 15 years of age and over was −·62 for Quebec and −·67 for Ontario. This indicates that children in the poorer families go to work much earlier than children in the better-off families.

r_{23}, the correlation between smallness of family and earnings of children was ·60 for Quebec and ·69 for Ontario. Evidently, children living in small families tend to earn more than children living in large families. This may be partly because the head of a small family is able to educate his children better than the head of a large family but it is probable that the correlation results from the fact that the classes who have small families are at the same time the classes who are in the best position to give their children a good start in life. In addition, families are small in the cities where earnings tend to be high.

r_{24}, the correlation between smallness of family and percentage of children 15 years of age and over at school was ·37 for Quebec and ·42 for Ontario. These correlations are rather low and it would seem that the earnings of the father has much more bearing on his ability to keep his children at school than has the size of his family. Large families *per se* do not prohibit advanced schooling.

r_{34}, the correlation between earnings of children and percentage of children 15 years of age and over at school was ·72 for Quebec and ·71 for Ontario. This is a further illustration of a point which has been repeatedly stressed, *viz.*, that two courses are open to the child of the prosperous wage-earner, either school or work, and that he is in a bargaining position with regard to work. When he does go to work he is older and his longer education may improve his earnings status.

r_{36}, the correlation between earnings of children and children gainfully occupied as percentage of children 15 years of age and over was −·28 for Quebec and −·36 for Ontario. Although these correlations are low their direction is of interest since it reveals that the larger the percentage of children with heads in a given occupation class who accept employment the smaller their average earnings. The children who are forced to work do not earn as much as those who work through choice.

Concluding Remarks.—A wide variety of family statistics have been discussed in this chapter and this summary will review some of the more important findings.

Family size was found to vary widely between occupations so that the natural increase of our population is being contributed largely by certain occupational groups while others are scarcely perpetuating themselves.

CX.—FAMILY SIZE AND RELATED DATA, BY BROAD GROUPING OF OCCUPATION OF HEAD OF FAMILY, CANADA, 1931

Occupation of Head	Number of Normal Families	Own Children			Estimated Rate of Natural Increase	P.C. of Family Heads in Given Occupation
		Total	Per Family	Per Completed Family (estimated)		
All occupations	1,033,863	2,245,417	2·17	3·75	11·8	100·00
Agriculture	43,195	90,435	2·09	3·62	10·2	4·18
Fishing, hunting, and trapping	4,872	12,933	2·65	4·58	22·6	0 47
Logging	12,289	34,746	2·83	4·90	26·7	1 19
Mining, quarrying, oil, and salt wells	25,794	67,210	2·61	4·52	21·8	2·50
Manufacturing	187,565	399,865	2·13	3·68	11·0	18·14
Electric light and power	23,046	53,460	2·32	4·01	15·2	2·23
Building and construction	104,969	251,358	2·39	4·13	16·8	10·15
Transportation and communication	134,991	302,152	2·24	3·88	13·6	13·06
Warehousing and storage	16,437	31,483	1·92	3·32	6·3	1·59
Trade	93,812	170,615	1·82	3·15	4·1	9·07
Finance, insurance	20,263	37,267	1·84	3·18	4·5	1·96
Service	121,312	223,732	1·84	3·18	4·5	11·73
Professional	50,447	85,893	1·70	2·94	1·4	4·88
Personal	41,925	78,192	1·87	3·24	5·3	4·06
Clerical	51,096	86,640	1·70	2·94	1·4	4 94
Labourers	190,655	476,690	2·50	4·33	19·4	18 44
Unspecified	595	1,201	2·02	3·49	8·5	0 06
Occupations with less than 10 persons	2,972	5,630	1·89	3·27	5·7	0·29

It is apparent from Statement CX that average family size and rate of increase varies widely between occupational classes. It is smallest for the trade, finance, service and clerical groups which evidently draw on other occupations for their recruits. While the professional service class draws picked recruits with the result that the increase of the fittest elements of the population is retarded, the personal service class must recruit largely the cast-offs from other occupations tending to reduce the rate of increase of the least fit element. Differential fertility as between occupational classes may consequently tend to stop the increase of both the fittest and least fit sections of the population. It follows that the average man is most prolific. The national stock improves when the greater increase comes from classes slightly above the average and deteriorates when it comes from classes slightly below the average. It is probable that in studies of differential fertility too much attention is often paid to the fertility of extreme classes. A high rate of increase among imbeciles and idiots may create a problem in that it taxes the accommodation of asylums but it does not necessarily result in racial degeneration of serious consequence.

It is evident that changing occupational content from decade to decade will tend to alter average family size and the rate of growth of the population. There is no evidence, however, that marked changes in occupational content of the population have been a major factor in contributing to the decrease in family size during the last fifty years. The progressively increasing concentration of individual occupations in large cities has, however, been one of the most important causes of the decline.

CHAPTER X

THE FARM HOUSEHOLD

Despite the phenomenal pace at which the centralization of industry has advanced in Canada during the seventy years of Canada's nationhood, the farm family has lost little ground as the unit of agricultural production. Ambitious attempts at farming on a mass-production scale which from time to time have been made in all sections of Canada, particularly the West, have almost inevitably failed and, at present, such schemes are advanced with less ardour than ever before. In previous chapters much evidence has been brought forth to illustrate the love of Canadians for their homes, and the importance of the family in our social system. Canadians of all races, particularly in the rural districts, have their distinctive and almost always admirable modes of family life and, for this reason, agriculture, the family industry, has progressed slowly but steadily through decades of political and economic unrest.

Farm Population.—The question, "Total number of persons, all ages, living on this farm June 1, 1931?" was inserted in the farm schedules for the first time at the 1931 Census. There were 3,289,140 persons*, or 31·7 p.c. of the total population of Canada, reported as living on 671,535 farms, the average farm household consisting of 4·90 persons. The rural farm population of the United States formed a considerably smaller proportion of its population in 1930 since it included only 30,157,513 persons or 24·6 p.c. of 122,775,046, its total population. There has been, however, a well-known tendency for the urban population of Canada to grow at the expense of the rural.

CXI.—RURAL AND URBAN POPULATION, CANADA, 1901-1931

Census Year	Population			
	Total	Urban	Rural	
			No.	P.C.
1901	5,371,315	2,014,222	3,357,093	62·50
1911	7,206,643	3,272,947	3,933,696	54·58
1921	8,787,949	4,352,122	4,435,827	50·48
1931	10,376,786	5,572,058	4,804,728	46·30

While the rural population during the three decades 1901-31 gained by 1,447,635 persons or 43·1 p.c., the urban population gained by 3,557,836 persons or 176·6 p.c. so that the percentage which the rural population forms of the total has steadily decreased. The construction of railways, which opened to settlement the plains of Western Canada, at the same time facilitated the division of labour in the production of clothing and household goods. This has had a profound effect on the composition of the Canadian family. It is seen in the early chapters of this monograph that the average size of the household was largest in all the settled parts of Canada in 1861. The typical farm home, which was at the same time the typical Canadian home, was practically a self-contained unit; the men worked on the farm while the women were busy at home, preparing meals and manufacturing clothing and household goods. Families were large and children were an asset or, at least, not a burden since food was plentiful, clothing was provided from the resources of the home and the children were able, at an early age, to fit into the productive machinery of the home. With the coming of the railway, however, children commenced to leave home while still young, the young men hearkening to the call of the West and the girls attracted by the bright lights of the city. Production for export and the outside market began to be of more importance than production for home consumption with the result that foodstuffs, formerly available in unlimited quantities, came to have a cash value. Goods from mail order houses replaced home-spun clothes. They may have been more attractive but they represented cash expenditure and

* Exclusive of inmates of institutional farms and persons living in households other than that of the farm operator.

had to be provided for the whole family so that children represented an item of expense in the farmer's budget. This has undoubtedly acted as a check on the birth rate. Moreover, the child, conscious of the burden he was imposing on his family, and unable to fit into the apparently increasing efficiency of farm production, became eager to leave home at the earliest possible moment. Harvesters' excursions to the West and the industrial growth both at home and in the United States presented an easy avenue of escape. Yet, the above picture, though a true one, deals with intangible things, human satisfactions and enjoyments, difficult to measure and capable of statistical treatment only in some of the results they produce. Average family size is a gauge, sensitive to every social change and, just as it is difficult to determine the effect of the motion of an individual molecule in the steam boiler on the pressure gauge which measures the motion of the totality of molecules, so is it difficult to estimate the relative importance of a single economic or social factor in determining average family size which reacts to them all. In the following pages the problem of interpreting the significance of average household size in 218 Canadian counties and census divisions is dealt with: in some of these life still resembles that existing throughout most of Eastern Canada in 1861, while in others change has been very rapid and none can predict the situation that will exist ten years from now.

Sizes of Farms.—Although the farmers' sons and daughters may have seemed eager to leave their farm homes, they carried away with them a deep love of family life which has been reflected, for example, in the tendency for lodgers to seek private homes. Moreover, the immigrant, confronted by the difficulties of life in a new and unfamiliar land, has been doubly endeared to his home, and family life has thus become as strongly established in the newer farming districts of Canada as in the older ones. As supporting the fact that large-scale farming has made very little headway in Canada, Statement CXXXVI will be found to give the average sizes of farms in the various provinces, and Statement CXII gives the distribution of farms according to size for Canada as a whole and for each province. Only 47,646 farms or 6·5 p.c. of all occupied farms consisted of 640 acres or more. These farms averaged 1,036·9 acres per farm and contained 30·3 p.c. of the occupied farm area in Canada. But many of the farms consisting of 640 acres or more are family-operated, there being 87,311 family workers on such farms in 1930 as compared with 13,871 permanent employees and 93,670 temporary employees.

CXII.—NUMERICAL AND PERCENTAGE DISTRIBUTION OF FARMS ACCORDING TO SIZE, CANADA AND PROVINCES, 1931

Province	Total Farms	1–4 Acres	5–10 Acres	11–50 Acres	51–100 Acres	101–200 Acres	201–639 Acres	640 Acres and over
				NUMBER				
CANADA	728,623	19,713	24,028	80,070	148,225	233,306	175,605	47,646
Prince Edward Island	12,865	333	357	3,052	5,071	3,418	631	3
Nova Scotia	39,444	2,468	3,055	9,616	10,325	9,526	4,207	247
New Brunswick	34,025	925	1,392	7,308	11,457	8,650	4,106	187
Quebec	135,957	3,442	3,268	16,976	43,915	48,823	19,094	439
Ontario	192,174	7,825	8,109	30,605	68,620	58,295	18,100	620
Manitoba	54,199	1,028	1,205	2,379	3,121	19,958	21,803	4,705
Saskatchewan	136,472	570	505	976	1,377	40,680	66,338	26,026
Alberta	97,408	692	810	1,301	1,774	39,318	38,767	14,746
British Columbia	26,079	2,430	5,327	7,857	2,595	4,638	2,559	673
				PERCENTAGE				
CANADA	100·0	2·7	3·3	11·0	20·4	32·0	24·1	6·5
Prince Edward Island	100·0	2·6	2·8	23·7	39·4	26·6	4·9	[1]
Nova Scotia	100·0	6·3	7·7	24·4	26·2	24·1	10·7	0·6
New Brunswick	100·0	2·7	4·1	21·5	33·7	25·4	12·1	0·5
Quebec	100·0	2·5	2·4	12·5	32·3	35·9	14·0	0·3
Ontario	100·0	4·1	4·2	15·9	35·7	30·3	9·4	0·3
Manitoba	100·0	1·9	2·2	4·4	5·8	36·8	40·2	8·7
Saskatchewan	100·0	0·4	0·4	0·7	1·0	29·8	48·6	19·1
Alberta	100·0	0·7	0·8	1·3	1·8	40·4	39·8	15·1
British Columbia	100·0	9·3	20·4	30·1	10·0	17·8	9·8	2·6

[1]Less than 0·1 p.c.

The extent to which farming is a family industry can possibly be best gauged by examination of the status of farm workers.

CXIII.—NUMBER OF FARM WORKERS, CANADA, 1930, BY SIZE OF FARM, 1931

Farm Size	Family Workers	Employees	
		Permanent	Temporary
All occupied farms	1,093,383	64,130	489,828
1- 4 acres	24,099	382	3,075
5- 10 "	29,181	763	11,310
11- 50 "	100,665	3,090	42,753
51-100 "	216,655	0,531	73,655
101-200 "	350,411	17,481	111,056
201-299 "	68,547	4,781	26,987
300-479 "	156,455	8,704	82,190
480-639 "	60,059	5,437	44,232
640 acres and over	87,311	13,871	93,670

There were seventeen times as many family workers on Canadian occupied farms in 1931 as permanent hired employees. Family workers were over 14 years of age and worked the year round on the farm. Temporary employees, though much more numerous than permanent employees, worked only 4,023,911 weeks as compared with 3,334,760 weeks for the permanent employees. The average temporary farm hand in 1930, therefore, worked only 6·8 weeks on each farm. However, he might be included several times in the total for temporary employees, as he would be reported by each farmer for whom he worked during the year. Consequently, it is probable that the actual number of men engaged in temporary farm work was much less than the figure reported in Statement CXIII. Allowing the family worker 52 weeks work per year, family farm workers worked 56,856,000 weeks in 1930 as compared with 7,368,671 weeks for hired workers so that family workers contributed 7·7 weeks labour for every week contributed by hired workers. Of the 728,623 occupied farms in Canada in 1931, only 281,044 or 38·6 p.c. reported expenditure for hired labour in 1930, the remaining 61·4 p.c. being operated by the farm operator and his family without outside help.

Family Self-Sufficiency on Farms.—The farm family is, therefore, generally self-sufficient with respect to farm labour. To what extent does it provide its own foodstuffs? From Statement CXIV below, we see that 75·8 p.c. of all occupied farms reported cows in milk or in calf. The percentage would be even higher if we could allow for non-resident farms.

CXIV.—FARMS REPORTING COWS IN MILK OR IN CALF, CANADA AND PROVINCES, 1931

Province	Occupied Farms	Farms Reporting Cows in Milk or in Calf	
		No.	P.C. of Occupied Farms
CANADA	728,623	582,089	75·8
Prince Edward Island	12,865	10,825	84·0
Nova Scotia	39,444	23,821	79·0
New Brunswick	34,025	25,402	80·2
Quebec	135,957	114,351	80·5
Ontario	192,174	157,493	78·3
Manitoba	54,199	45,001	80·5
Saskatchewan	136,472	111,413	72·0
Alberta	97,408	72,984	69·2
British Columbia	26,079	14,499	53·0

The percentage of farms reporting milch cows is high for every province except British Columbia. It will be noted that a surprisingly large portion of the farms in the Prairie Provinces have milch cows.

CXV.—DISTRIBUTION OF FARMS REPORTING COWS IN MILK OR IN CALF, ACCORDING TO NUMBER REPORTED, CANADA AND PROVINCES, 1931

Province	Farms Reporting Cows in Milk or in Calf	Farms Reporting					
		1–4 Cows	5–9 Cows	10–14 Cows	15–19 Cows	20–29 Cows	30 Cows and over
CANADA	582,089	273,174	191,692	39,226	49,898	10,582	11,517
Prince Edward Island	10,825	8 281	2,482	41	17	3	1
Nova Scotia	23,821	22,498	1,277	25	16	4	1
New Brunswick	25,402	23,039	2,294	46	16	1	6
Quebec	114,351	90,405	22,772	797	301	43	33
Ontario	157,493	84,927	66,434	4,283	1,580	157	112
Manitoba	45,001	10,476	17,247	5,585	8,161	2,463	1,069
Saskatchewan	111,413	11,333	44,715	17,111	24,659	8,494	5,101
Alberta	79,284	11,557	32,003	10,917	14,709	5,228	4,870
British Columbia	14,499	10,658	2,468	421	439	189	324

According to Statement CXV, 273,174 farms, or 51·8 p.c. of the total reporting, report only from 1 to 4 cows so that it would appear that more than one-half the farmers keeping milch cows do so primarily to provide for home consumption. In Nova Scotia, where farming is still conducted on a part-time basis along the sea-coast, fishing providing a complementary source of income, 79·0 p.c. of the farms report milch cows, and 94·4 p.c. of these report only from 1 to 4. The importance of these farms (where only a small number of cows is kept) in Canada's dairy industry can best be realized by estimating the population living on them for which a full supply of dairy produce is provided besides some surplus for outside sale. Assuming that 4·90 persons, the average size of the Canadian farm household, live on each of the 273,174 farms reporting from 1 to 4 cows in milk or in calf we get a population of 1,339,000 persons or 13 p.c. of the total population of Canada. It is also noteworthy that only 11,517 farms or 2 p.c. of those reporting cows in milk or in calf report 30 cows or more indicating that there has been little tendency towards large-scale dairy farming.

CXVI.—PERCENTAGES OF ALL OCCUPIED FARMS REPORTING VARIOUS CLASSES OF LIVE STOCK, CANADA AND PROVINCES, 1931

Province	P.C. of Occupied Farms Reporting					Mean of Percentages
	Cows in Milk or in Calf	Sheep	Swine	Poultry	Bees	
CANADA	75·8	17·9	60·1	79·8	2·4	47
Prince Edward Island	84·0	36·7	65·4	86·6	0·1	55
Nova Scotia	79·0	24·7	51·7	76·5	0·3	46
New Brunswick	80·2	28·6	66·4	84·0	1·0	52
Quebec	80·5	37·9	71·2	83·3	3·8	55
Ontario	78·3	18·8	59·9	83·1	3·7	49
Manitoba	80·5	9·0	65·3	82·6	3·6	48
Saskatchewan	72·0	3·7	57·5	76·0	0·6	42
Alberta	69·2	7·0	56·0	74·1	0·3	41
British Columbia	53·0	5·9	23·8	67·7	5·5	31

Poultry are kept on 79·8 p.c. of Canadian farms and swine on 60·1 p.c. Evidently the farm family depends on the farm to provide poultry and eggs even more frequently than for dairy produce. Swine are also kept on the majority of farms except in British Columbia. From the averages of the percentages given in the last column of Statement CXVI, it would appear that farm families are most self-sufficient with respect to live-stock produce in the provinces of Prince Edward Island and Quebec and least self-sufficient in British Columbia, which is significant in view of the fact that British Columbia is the province having the smallest families. Bees are found only on a small percentage of farms throughout Canada.

Average Size of Farm Household.—This chapter will deal primarily with the significance of the average size of the farm household obtained by dividing the farm population in each district by the number of occupied farms exclusive of non-resident farms. Non-resident farms are particularly common in Western Canada and are generally operated by farmers living on farms in another census subdistrict.

CXVII.—AVERAGE PERSONS PER FARM HOUSEHOLD AND PER RURAL HOUSEHOLD,[1] CANADA AND PROVINCES, 1931

Province	Persons per	
	Farm Household	Rural Household
CANADA	4·90	4·62
Prince Edward Island	4·59	4·60
Nova Scotia	4·67	4·55
New Brunswick	5·45	5·20
Quebec	6·14	5·79
Ontario	4·51	4·21
Manitoba	5·09	4·75
Saskatchewan	4·70	4·73
Alberta	4·26	4·20
British Columbia	4·00	3·50

[1]Exclusive of hotels, rooming houses, camps and institutions.

The average farm household is larger than the average for the rural population as a whole, except in Prince Edward Island and Saskatchewan where the rural non-farm households are apparently slightly larger than the farm households. Of the total 3,289,140 farm population of Canada, 3,223,874 live in rural districts so that the urban farm population is insignificant. It will be included in the total in all these studies.

Farm Operators.—According to Statement CXVIII, farm operators in the Eastern Provinces are for the most part indigenous to the home provinces while the majority of those in the Western Provinces are foreign-born with a considerable percentage born in other provinces. This has a marked bearing on their age distribution as will be seen from Statement CXIX. Nova Scotia, with 35·5 p.c., has the highest percentage of farm operators 60 years of age and over, while Prince Edward Island, New Brunswick, Ontario and British Columbia have, respectively, 30·7 p.c., 27·1 p.c., 25·9 p.c. and 24·5 p.c., of their farm operators 60 years of age and over. This factor will tend to reduce the average size of the farm household in these provinces since there will be a large proportion of households where all children have left home. On the other hand, Saskatchewan and Alberta have a large proportion of very young farm operators, many of whom are bachelors or only recently married, thus tending to lower the average.

CXVIII.—NUMBER AND PERCENTAGE BORN IN CANADA AND IN PROVINCE OF RESIDENCE, OF FARM OPERATORS REPORTING BIRTHPLACE, CANADA AND PROVINCES, 1931

Province	Farm Operators Reporting Birthplace				
	Total	Canada		Province of Residence	
		No.	P.C.	No.	P.C.
CANADA	671,090	454,794	67·8	380,529	56·7
Prince Edward Island	12,098	11,864	98·1	11,723	96·9
Nova Scotia	38,017	36,655	96·4	36,211	95·2
New Brunswick	33,033	31,277	94·7	29,806	90·2
Quebec	126,582	123,453	97·5	122,570	96·8
Ontario	177,581	154,644	87·1	149,054	83·9
Manitoba	50,206	22,761	45·3	13,147	26·2
Saskatchewan	119,945	41,014	34·2	9,276	7·7
Alberta	88,066	24,811	28·2	5,960	6·8
British Columbia	25,562	8,315	32·5	2,782	10·9

CXIX.—AGE DISTRIBUTION OF FARM OPERATORS, CANADA AND PROVINCES, 1931

Age Group	P.C. of Farm Operators in									
	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
All ages	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
Under 20 years	0·3	0·3	0·2	0·3	0·2	0·2	0·2	0·4	0·5	0·2
20–24 years	2·8	2·0	1·2	1·9	2·5	1·8	2·7	4·2	4·8	1·6
25–29 "	7·0	4·8	3·1	5·0	7·5	5·5	7·6	9·2	9·6	3·8
30–34 "	9·4	7·7	6·0	7·8	10·4	8·5	10·2	10·6	11·2	5·9
35–39 "	11·8	10·7	8·6	10·6	12·0	10·9	13·0	13·6	13·0	9·3
40–49 "	26·3	22·4	21·7	24·2	25·3	24·0	27·8	30·6	28·6	28·1
50–59 "	21·9	21·4	23·7	23·1	22·1	23·2	21·0	20·2	19·5	26·6
60–69 "	14·1	18·2	21·0	17·6	13·9	17·5	13·0	8·5	9·6	17·7
70 years and over	6·4	12·5	14·5	9·5	6·1	8·4	4·5	2·7	3·2	6·8

It is not a simple matter to devise an index measuring the favourableness of an age distribution to large average family size. It was found in Chapter VI that the ratio of the number of heads of families 35–54 years of age to the number under 25 and "65 and over," correlated with average private family size. Applying a similar index to the age distribution of farm operators, it will be found that Alberta has an extremely favourable index despite the fact that the average size of farm households in that province, 4·26 persons, is very small. Apparently, age distribution of farm operators is a minor factor in determining average size of farm household. The Eastern Provinces have a very high percentage of operators above the ages of maximum family responsibility while the Western Provinces have a high percentage below these ages. The favourableness which might be expected from the large percentage of middle-aged farm operators in British Columbia and Alberta is offset by the fact that they belong to a moving population since, according to Statement CXVIII, only 6·8 p.c. of the Alberta farm operators and 10·9 p.c. of those in British Columbia were born in their province of residence. It would appear that length of residence in province and duration of time on farm are more potent factors than age in determining the size of the farm operator's household.

CXX.—PERCENTAGE DISTRIBUTION OF FARM OPERATORS, BY NUMBER OF YEARS ON PRESENT FARM, CANADA AND PROVINCES, 1931

Years on Present Farm	P.C. of Farm Operators in									
	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
Total	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
Less than 2 years	10·1	4·7	4·9	6·6	8·2	9·9	12·3	11·2	13·8	15·2
2 years	6·5	3·6	8·5	4·7	4·9	5·0	7·6	8·5	10·5	7·6
3 "	6·2	4·0	3·2	4·4	4·8	4·6	7·1	8·6	9·8	7·0
4 "	4·8	3·4	2·9	3·8	4·0	3·8	5·7	6·8	6·3	5·5
5– 9 "	15·7	13·2	12·6	13·4	15·7	15·4	16·2	17·2	15·7	18·7
10–14 "	16·4	15·1	14·6	15·5	15·8	18·2	16·1	15·2	15·3	20·2
15–19 "	11·2	10·6	10·7	11·1	10·6	11·3	11·0	12·5	10·6	9·9
20 years and over	29·1	45·4	47·6	40·5	36·0	31·8	24·0	20·0	18·0	15·9

35·1, 40·4 and 35·3 p.c. of the farm operators in Saskatchewan, Alberta and British Columbia, respectively, have been on their present farms less than 5 years as compared with 27·6 p.c. for Canada as a whole. There will, as a result, be a large proportion of incompleted farm families in these provinces tending to lower the average size of the household.

Average Size of Farm Household in the Counties and Census Divisions.—Since a continuous breakdown of census data into fine geographical groupings is unfeasible, most of the census compilations were made for provinces. Consequently, each province is dealt with as a unit on the assumption that the population studied is homogeneous throughout though, actually, conditions may vary widely within the province itself. Since the farm population and the number of farms at the 1931 Census is available by counties in Eastern Canada and by census divisions in Western Canada an opportunity is afforded of observing the variation of the average size of the farm household within each province.

In Statement CXXI the counties and census divisions in each province are distributed according to average size of farm household. It will be noted that the average for each county tends to conform to the average for the whole province. For example, Quebec, where the provincial average is largest, has a relatively large average household for every county, while British Columbia, where the provincial average is smallest, has a relatively small average in every county. At the bottom of the column for each province the unweighted mean of the averages for the divisions is given and also the standard deviation and coefficient of dispersion of the averages about the unweighted means. To avoid grouping errors the actual averages for each county to two decimal places were used in the calculation of these statistics. British Columbia had the largest coefficient of dispersion indicating that it was the least homogeneous province geographically with respect to size of average farm household. Alberta, New Brunswick and Quebec also had relatively large coefficients of dispersion. It should, consequently, be borne in mind that family conditions found in parts of the provinces of British Columbia, Alberta, New Brunswick and Quebec are less likely to be typical of those found throughout the province than are conditions found in parts of the remaining provinces. Attention is now directed to the study of the variation of the average size of the farm household by counties and census divisions, dealing with each province separately.

CXXI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 218 COUNTIES AND CENSUS DIVISIONS ACCORDING TO AVERAGE SIZE OF FARM HOUSEHOLD AND PROVINCES, CANADA, 1931

Average Persons per Farm Household	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
3·1 and less than 3·2								1	1	2
3·2 " " " 3·3								1		1
3·3 " " " 3·4								1	1	2
3·4 " " " 3·5										
3·5 " " " 3·6										
3·6 " " " 3·7										
3·7 " " " 3·8					1				2	3
3·8 " " " 3·9								2	2	4
3·9 " " " 4·0								1	1	2
4·0 " " " 4·1					5		1		1	7
4·1 " " " 4·2					3		2	2	1	8
4·2 " " " 4·3		2			4			2		8
4·3 " " " 4·4					5		2	1		8
4·4 " " " 4·5	2	1	1		11		1	3		19
4·5 " " " 4·6		5	3		8		4			20
4·6 " " " 4·7		2			7	2	1	1		13
4·7 " " " 4·8		2		1	3	1	1			8
4·8 " " " 4·9	1	4	2	1	1	4				13
4·9 " " " 5·0		1	2			3	2	1		9
5·0 " " " 5·1					1		2	1		4
5·1 " " " 5·2		1		3		1	1		1	7
5·2 " " " 5·3				3	1	1	1			6
5·3 " " " 5·4				4	1	1				6
5·4 " " " 5·5			1	5		1				7
5·5 " " " 5·6				2	1	1				4
5·6 " " " 5·7			2	5	2					9
5·7 " " " 5·8										
5·8 " " " 5·9				3	1	1				5
5·9 " " " 6·0				6						6
6·0 " " " 6·1			1	5						6
6·1 " " " 6·2			1	3						4
6·2 " " " 6·3				4						4
6·3 " " " 6·4			1	4						5
6·4 " " " 6·5			1	4						5
6·5 " " " 6·6				2						2
6·6 " " " 6·7				1						1
6·7 " " " 6·8										
6·8 " " " 6·9				1						1
6·9 " " " 7·0				1						1
7·0 " " " 7·1										
7·1 " " " 7·2				1						1
7·2 " " " 7·3				2						2
7·3 " " " 7·4				2						2

CXXI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 128 COUNTIES AND CENSUS DIVISIONS ACCORDING TO AVERAGE SIZE OF FARM HOUSEHOLD AND PROVINCES, CANADA, 1931—Con.

Average Persons per Farm Household	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
7·4 and less than 7·5										
7·5 " " " 7·6				2						2
7·6 " " " 7·7										
7·7 " " " 7·8										
7·8 " " " 7·9				1						1
Total	3	18	15	66	55	16	18	17	10	218
Unweighted mean	4·58	4·66	5·30	6·05	4·55	5·03	4·65	4·15	3·89	
Standard deviation	0·22	0·24	0·67	0·69	0·43	0·32	0·36	0·52	0·53	
Coefficient of dispersion	0·05	0·05	0·13	0·11	0·09	0·06	0·08	0·13	0·14	

QUEBEC

Size of Farm Household.—Since the farms and rural districts of the province of Quebec present an extremely interesting field for a statistical study of family size, this province is dealt with first. Although the average size of the Quebec rural family dropped considerably between 1861 and 1881, it has varied little since, showing at times a slight tendency to rise. In many parts of the province the average size of the farm household is the same as it was one hundred years ago when households were correspondingly large in every settled part of Canada. Moreover, in 56 of the 66 counties the population is over 70 p.c. French, and so we can observe the reaction of a population, homogeneous with respect to race, religion and culture, to the different physical conditions found in a large province. That physical conditions have a pronounced effect on family size in Quebec is evident from the surprisingly wide dispersion in household size from county to county. In Statement CXXII the average size of the farm household in each county is given along with the crude and standardized birth rates taken from the *Special Report on Births in Canada According to Place of Residence of Mother, 1930-32*, issued by the Vital Statistics Branch of the Dominion Bureau of Statistics. It was, unfortunately, not feasible to compile a birth rate for the purely farm or rural population since many mothers gave their post office address as their place of residence. However, when there were towns with populations of 5,000 and over in the county, separate rates were given for each town and the remainder of the county so that the rates given in the following statement are for the counties exclusive of towns 5,000 and over. The standardized rates were based on the age distribution of women 15–50 years of age, in five-year age groups.

CXXII.—AVERAGE SIZE OF FARM HOUSEHOLD AND BIRTH RATES, 1930-1932, QUEBEC, BY COUNTIES, 1931

County	Persons per Farm Household	Rank of County	Birth Rate, 1930-32					
			Crude			Standardized		
			Rate	Rank of County	Difference in Rank (col. 4-col. 2)	Rate	Rank of County	Difference in Rank (col. 7-col. 2)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Quebec	6·14	-	29·0	-	-	27·9	-	-
Chicoutimi	7·80	1	43·6	2	1	48·8	3	2
Rimouski	7·53	2	35·1	14	12	38·4	19	17
Saguenay	7·52	3	38·2	6	3	45·4	6	3
Témiscouata	7·38	4	35·9	12	8	41·2	15	11
Lac-St-Jean	7·34	5	45·1	1	− 4	51·8	1	− 4
Charlevoix	7·28	6	35·8	13	7	38·5	18	12
Montmorency	7·26	7	33·2	18	11	35·6	27	20
Kamouraska	7·12	8	32·4	23	15	39·4	17	9
Matane	6·90	9	41·5	3	− 6	48·3	4	− 5
L'Islet	6·83	10	32·9	21	11	37·7	21	11
Champlain	6·69	11	33·2	19	8	38·3	20	9
Beauce	6·58	12	37·1	10	− 2	42·5	12	-
Lévis	6·50	13	29·9	35	22	33·5	34	21
Bellechasse	6·46	14	33 8	17	3	41·5	14	-

CXXII.—AVERAGE SIZE OF FARM HOUSEHOLDS AND BIRTH RATES, 1930-1932, QUEBEC, BY COUNTIES, 1931—Con.

County	Persons per Farm Household (1)	Rank of County (2)	Birth Rate, 1930-32					
			Crude			Standardized		
			Rate (3)	Rank of County (4)	Difference in Rank (col. 4—col. 2) (5)	Rate (6)	Rank of County (7)	Difference in Rank (col. 7—col. 2) (8)
Quebec—Con.								
Quebec	6·44	15	26·9	45	30	25·8	55	40
Bonaventure	6·43	16	33·9	16	-	43·3	11	— 5
Frontenac	6·40	17	37·7	8	— 9	45·1	7	—10
Gaspé	6·37	18	38·0	7	—11	46·7	5	—13
Portneuf	6·37	19	32·7	22	3	34·8	30	11
Maskinongé	6·33	20	32·0	24	4	34·1	33	13
St-Maurice	6·30	21	29·6	36	15	35·1	28	7
Montreal and Jesus Islands	6·29	22	18·3	65	43	17·3	66	44
Montmagny	6·25	23	32·0	25	2	36·5	26	3
Arthabaska	6·23	24	31·1	27	3	36·9	23	— 1
Dorchester	6·22	25	36·7	11	—14	43·9	10	—15
Lotbinière	6·17	26	33·1	20	— 6	39·6	16	—10
Verchères	6·13	27	28·1	40	13	30·0	44	17
Chambly	6·10	28	18·8	64	36	20·0	65	37
Temiskaming	6·08	29	39·2	5	—24	44·6	9	—20
Wolfe	6·06	30	34·2	15	—15	41·9	13	—17
Labelle	6·05	31	37·4	9	—22	44·8	8	—23
Terrebonne	6·01	32	29·2	38	6	31·1	42	10
Yamaska	6·01	33	30·8	29	— 4	34·4	31	— 2
Mégantic	5·98	34	31·1	28	— 6	36·7	25	— 9
Nicolet	5·97	35	30·4	33	— 2	33·4	36	1
Richelieu	5·97	36	26·4	46	10	27·6	51	15
Joliette	5·94	37	31·8	26	—11	36·9	24	—13
Papineau	5·92	38	30·7	30	— 8	37·0	22	—16
Laprairie	5·92	39	26·1	48	9	28·9	47	8
Berthier	5·85	40	27·4	42	2	29·4	45	5
Deux-Montagnes	5·84	41	26·4	47	6	29·2	46	5
Hull	5·81	42	30·4	34	— 8	35·0	29	—13
L'Assomption	5·66	43	29·2	39	— 4	31·4	41	— 2
Beauharnois	5·64	44	19·4	63	19	21·6	63	19
Vaudreuil	5·62	45	23·1	57	12	23·1	61	16
Richmond	5·62	46	30·6	31	—15	34·3	32	—14
Drummond	5·62	47	27·1	43	— 4	30·9	43	— 4
Napierville	5·59	48	27·0	44	— 4	31·6	40	— 8
Shefford	5·52	49	27·9	41	— 8	33·4	37	—12
Montcalm	5·48	50	29·3	37	—13	33·2	38	—12
Pontiac	5·47	51	25·7	49	— 2	32·5	39	—12
Rouville	5·47	52	24·8	52	-	26·3	53	1
Bagot	5·46	53	30·4	32	—21	33·5	35	—18
Soulanges	5·44	54	25·3	50	— 4	28·7	49	— 5
Iberville	5·39	55	24·9	51	— 4	27·3	52	— 3
Compton	5·35	56	24·6	53	— 3	28·9	48	— 8
Sherbrooke	5·33	57	23·0	58	1	24·6	58	1
St-Hyacinthe	5·33	58	21·8	60	2	22·7	62	4
Stanstead	5·26	59	22·0	59	-	23·6	59	-
Argenteuil	5·23	60	21·7	61	1	24·9	57	— 3
Chateauguay	5·20	61	23·2	55	— 6	26·2	54	— 7
St-Jean	5·14	62	23·8	54	— 8	27·7	50	—12
Abitibi	5·13	63	39·3	4	—59	49·1	2	—61
Missisquoi	5·13	64	23·2	56	— 8	23·6	60	— 4
Brome	4·84	65	16·7	66	1	20·1	64	— 1
Huntingdon	4·72	66	21·2	62	— 4	25·5	56	—10

In Statement CXXII the counties have been ranked in order of the average sizes of their farm households, Chicoutimi ranking first with 7·80 persons per farm household and Huntingdon last with 4·72.

CXXIII.—PERCENTAGE OF POPULATION OF FRENCH RACIAL ORIGIN, SELECTED COUNTIES, QUEBEC, 1931

County	P.C. French Racial Origin	County	P.C. French Racial Origin
Argenteuil	58·1	Montreal and Jesus Islands	60·8
Brome	45·3	Pontiac	41·2
Chambly	61·8	Sherbrooke	71·8
Huntingdon	47·9	Stanstead	66·2
Missisquoi	67·9		

In the above statement the percentage of the population reporting French racial origin is given, for the nine counties containing a considerable non-French element. In the remaining counties the total population is at least 70 p.c. French racial origin, the French predominating

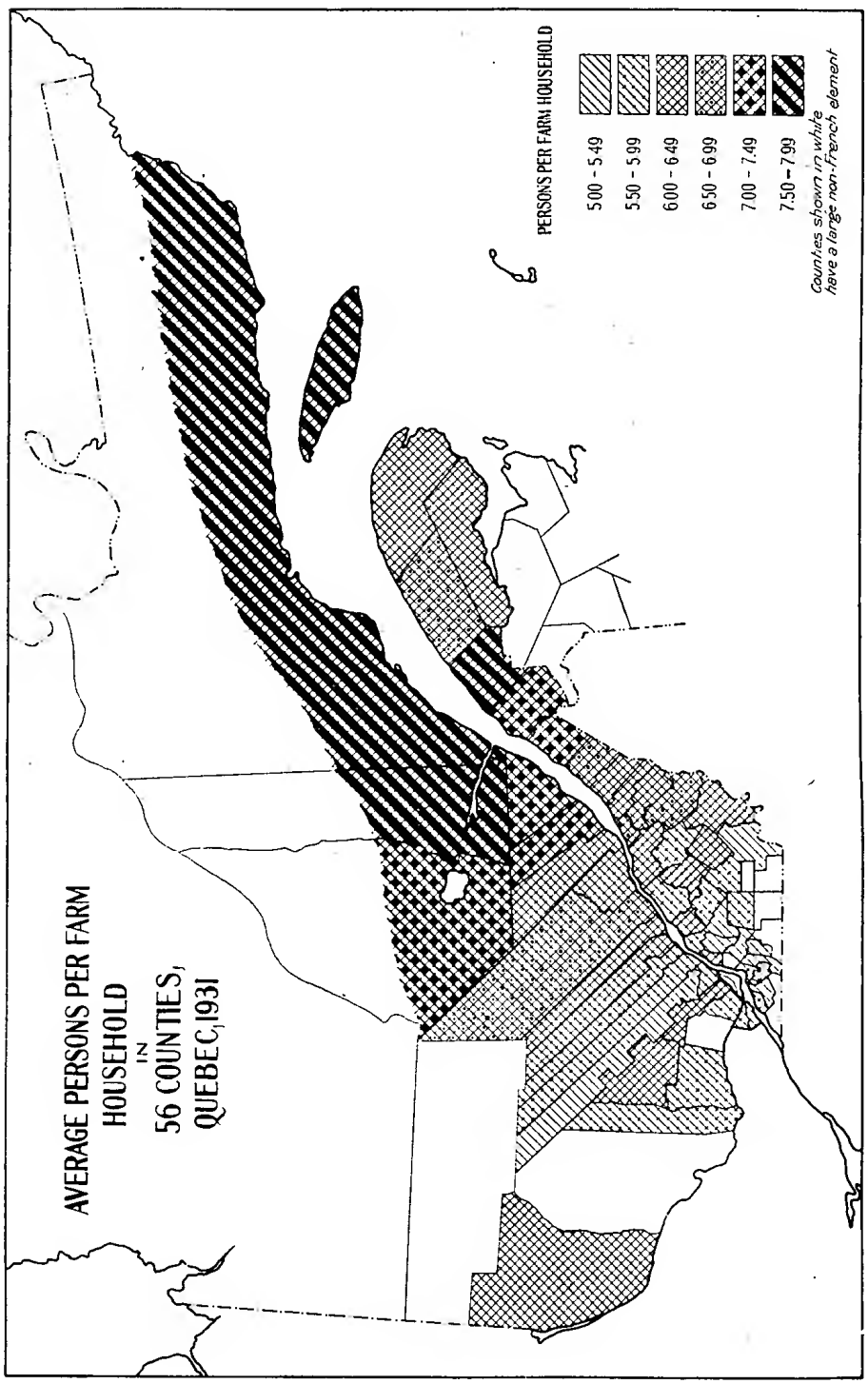
even more considerably in the farm population. Of the counties appearing above, three rank at the bottom of Statement CXXII in the average size of farm household while the average farm household is small in the remaining six.

Correlation of Household Size and Birth Rate.—By inspection it is obvious that the counties having the largest average households have also the highest birth rates. Evidently large families are assured in these counties by a continuous supply of children. The rank correlation of household size with crude birth rate was ·72 and with standardized birth rate ·67. It is not surprising that household size correlates better with the crude birth rate than with one standardized for age, for an age distribution favourable to a high birth rate would tend to favour large families since it would contain a small proportion of elderly family heads. On the other hand, a population with a large proportion of young married women would have an age distribution favourable to a high crude birth rate but average family size would be lowered by the presenee of a large proportion of incompleted families.

It is noteworthy that Abitibi county, though ranking sixty-third among the counties in average household size, ranks fourth in crude birth rate and second in standardized birth rate, making rank differences of −59 and −61. Abitibi is a new county which has been colonized largely by an influx from the older parts of the province. During the decade 1921-31, the rural population increased from 12,215 to 19,421, an increase of 59 p.c. Since the colonists from southern Quebec were forced to travel a considerable distanee to settle in Abitibi, it is unlikely that their families were very large when they arrived, a goodly portion being unmarried men. In addition, the hermit-trapper is a familiar figure in the less-settled parts of Canada. During the summer he works his small farm and in the winter he traps. Consequently, it is likely that in Abitibi there are many households of one person. Moreover, the proportion of completed families is probably small. At the same time, the birth rate is responding to the possibilities of expansion and it is most likely that large families are assured for Abitibi farms in the future. It is evident that a district rapidly increasing its population by an influx of colonists from distant parts of the province or from outside the province has a small average farm household since immigration lowers the average size of the family even though the birth rate be very high. This illustrates the fallacy of interpreting average family size solely on the basis of fertility, particularly in the past when the whole country and each of its parts was passing through various stages of settlement. Temiskaming county, also in process of colonization from outside, has a rank in household size well below that to be expected from its birth rate.

In contrast, Lévis, Quebec, Montreal and Jesus Islands and Chambly are counties which have a large positive difference in rank in household size and birth rate. That is, the average farm household is much larger in these counties which lie about the cities of Montreal and Quebec than would be expected from the birth rate. One explanation would be that children stay at home longer because the higher prices for farm produce resulting from the proximity of a metropolitan market makes their labour on the home farm more profitable; another, that they obtain employment in the city but still live at home. It is also possible that heads of large families employed in the city settle their families on nearby farms since their incomes are insufficient to support them inside the city. It seems apparent, however, that the large cities do not exert the same drain on the population of the rural districts in their immediate vicinity as they do on the population of rural districts somewhat farther away.

Correlation of Household Size with Increase in Rural Population and Density of Settlement.—In the accompanying map, counties have been shaded according to the size intervals in which their average households lie. The counties of Argenteuil, Brome, Chambly, Huntingdon, Missisquoi, Montreal and Jesus Islands, Pontiac, Sherbrooke and Stanstead, which were seen from Statement CXXIII to have a large non-French content, and the county of Abitibi have been shown in white. In the remaining counties differential household size must be interpreted in terms of the influence of physical and economic factors. It is obvious that the average household is very large in the counties of northeastern Quebec, and those bordering on the Lower St. Lawrence. The smallest households in Quebec, on the other hand, are found in the counties in the south west. The former group of counties has a largely indigenous population which has been increasing steadily by the natural increase resulting from a high birth rate. Though they have been settled for many generations there is still land available for colonization. It is in line with the theory that population grows in accordance with the density of population which the land can support that these counties have experienced a rapid growth due to natural increase.


AVERAGE PERSONS PER FARM HOUSEHOLD IN 56 COUNTIES, QUEBEC, 1931
PERSONS PER FARM HOUSEHOLD
5·00 - 5·49
5·50 - 5·99
6·00 - 6·49
6·50 - 6·99
7·00 - 7·49
7·50 - 7·99
Counties shown in white have a large non-French element

Map 1

CXXIV.—ACTUAL AND CALCULATED SIZE OF FARM HOUSEHOLD AND PERCENTAGE OF LAND AREA OCCUPIED, 1931, AND RURAL POPULATION, QUEBEC, 1931 AND 1921

County	Persons per Farm Household			Farm Population[1]	Occupied Farms[1]	Y P.C. of Land Area Occupied	Rural Population		
	Z Actual (col. 4 ÷ col. 5) (1)	Calculated (2)	Difference (col. 2 − col. 1) (3)	(4)	(5)	(6)	1931 (7)	1921 (8)	X 1931 as P.C. of 1921 (9)
Chicoutimi	7·80	7·58	−0·22	13,073	1,676	2·9	18 333	14.182	129
Rimouski	7·53	6·92	−0·61	15,400	2,046	26·0	22,202	19,324	115
Saguenay	7·52	7·47	−0·05	3 240	431	-	20,641	16,348	126
Témiscouata	7·38	6·49	−0·89	26,708	3,617	52·9	36.066	33.756	107
Lac-St-Jean	7·34	6·96	−0·38	24.918	3,395	3·6	30.614	26.779	114
Charlevoix	7·28	6·49	−0·79	10,749	1,476	19·8	15.347	14,722	104
Montmorency	7·26	7·21	−0·05	7.493	1,032	12·9	13.891	11.507	121
Kamouraska	7·12	6·42	−0·70	14.017	1,970	37·6	21.737	20.912	104
Matane	6·90	6·48	−0·42	22,325	3,237	24·2	27,826	26,686	104
L'Islet	6·83	6·57	−0·26	11,880	1,740	53·7	18,669	17,090	109
Champlain	6·69	6·67	−0·02	17.951	2,684	6·4	29,243	27.407	107
Beauce	6·58	6·25	−0·33	28,698	4,362	82·8	33,366	31,959	104
Lévis	6·50	5·37	−1·13	7 071	1.088	87·7	12,915	15,471	83
Bellechasse	6·46	6·01	−0·45	14,852	2.300	81·4	20,714	21,108	08
Quebec	6·44	6·91	−0·47	9.586	1.489	7·4	20.680	18.280	113
Bonaventure	6·43	6·79	0·36	24.744	3,850	16·3	32.432	29,092	111
Frontenac	6·40	6·23	−0·17	16,342	2,555	45·4	20,345	20.374	100
Gaspé	6·37	6·77	0·40	34,256	5,375	10·5	41.818	37,855	110
Portneuf	6·37	6·05	−0·32	16,945	2,661	40·2	22.190	21.741	102
Maskinongé	6·33	5·95	−0·38	9.103	1,439	11·7	12,970	14,481	90
St-Maurice	6·30	6·47	0·17	10,007	1,588	15·9	15,582	15,122	103
Montmagny	6·25	5·85	−0·40	9,721	1.555	50·0	16.312	17.852	91
Arthabaska	6·23	5·91	−0·32	15.124	2.426	85·7	16.748	17.384	96
Dorchester	6·22	6·14	−0·08	20.768	3.337	79·8	26.782	26.388	101
Lotbinière	6·17	6·01	−0·16	15,201	2,462	82·1	16,878	17,199	98
Verchères	6·13	5·87	0·26	6 714	1,095	96·0	8 026	8.393	96
Témiskaming	6·08	6·60	0·52	7.730	1,272	3·6	11.521	10.924	105
Wolfe	6·06	5·82	0·24	11,664	1,926	67·9	12.179	13.211	92
Labelle	6·05	6·39	0·34	11.650	1,926	22·9	14.783	14.560	102
Terrebonne	6·01	5·92	−0·09	12,875	2,143	62·3	18.058	19.196	94
Yamaska	6·01	5·83	−0·18	10.674	1,776	79·8	12.740	13.839	92
Mégantic	5·98	5·94	−0·04	14,911	2.492	78·3	17.191	17.897	96
Nicolet	5·97	5·64	−0·33	19.495	3.264	92·7	21.845	24.247	90
Richelieu	5·97	5·90	−0·07	6.620	1,108	89·4	8 081	8.440	96
Joliette	5·94	6·06	0·12	11,596	1,953	16·5	15.652	16,800	93
Papineau	5·92	-	-	14,228	2.405	39·3	17.147	18.033	95
Laprairie	5·92	6·27	0·35	5 647	954	88·2	10.002	9.485	105
Berthier	5·85	5·99	0·14	10.618	1.816	22·0	15.237	16.649	92
Deux-Montagnes	5·84	5·99	0·15	8,612	1.475	96·7	11,782	11.057	99
Hull	5·81	6·53	0·72	15,723	2,706	31·6	25.709	24,154	106
L'Assomption	5·66	5·70	0·04	7.598	1,343	88·6	9,945	11,032	90
Beauharnois	5·64	6·11	0·47	4,668	828	75·8	6,009	6,027	100
Vaudreuil	5·62	5·56	−0·06	4.966	884	91·3	6.576	7.509	88
Richmond	5·62	6·01	0·39	10.428	1,856	71·1	11.850	12.221	97
Drummond	5·62	5·80	0·18	11.033	1,962	81·9	14,826	15,967	93
Napierville	5·58	5·68	0·09	5.069	907	93·4	5,542	6.118	91
Shefford	5·52	5·55	0·03	11.910	2.158	95·9	13.094	14.960	88
Montcalm	5·48	6·26	0·78	8.642	1,576	7·1	10,780	11,090	97
Rouville	5·47	5·78	0·31	7 624	1,395	89·5	8,690	9,315	93
Bagot	5·46	5·66	0·20	11,133	2,039	98·9	11,965	13,210	91
Soulanges	5·44	5·49	0·05	4 392	808	90·6	5,873	6,797	86
Iberville	5·39	5·65	0·26	5.111	949	89·3	5.898	6,585	90
Compton	5·35	5·91	0·56	12 375	2.313	64·8	14.322	15,312	94
St-Hyacinthe	5·33	5·93	0·60	7.775	1,459	91·6	9,072	9,352	97
Chateauguay	5·20	5·81	0·61	7.949	1,530	91·4	9,548	10,198	94
St-Jean	5·14	5·92	0·78	4,605	896	83·0	5,700	5,930	96
Unweighted mean	6·17	-	-	-	-	55·9	-	-	99·6
Standard deviation	0·65	-	-	-	-	33·8	-	-	9·8

[1]Exclusive of non-resident farms.

Multiple regression equation: $Z = 2{\cdot}328 + 0{\cdot}041\,X - 0{\cdot}0039\,Y$;

Z—average size of rural farm families;

X—1931 population as percentage of 1921;

Y—Percentage of land area occupied;

Multiple correlation coefficient: $R^2 = {\cdot}58$, $R = {\cdot}76$;

Simple correlations: $r_{zx} = {\cdot}74$, $r_{zy} = -{\cdot}60$, $r_{xy} = -{\cdot}64$.

The 56 counties included in the above correlations were almost solidly French in the farming sections. Nevertheless, average size of household varies from 7·80 for Chicoutimi to 5·14 for St-Jean. The unweighted mean of the averages was 6·17 and the unweighted standard deviation about this mean 0·65. The simple correlation between size of household and the ratio of the 1931 rural population to the 1921 population, $R_{zx} = {\cdot}74$, is highly significant and indicates

that large farm households are closely associated with an increasing population. That counties in the province of Quebec which have increased their rural population are those where a large portion of the available land has not yet been colonized is illustrated by the negative correlation, $R_{xy} = -\cdot 64$, between population increase as measured by the ratio of the 1931 rural population of each county to the 1921 and percentage of land area occupied. The interesting correlation, $R_{zy} = -\cdot 60$, between household size and percentage of land occupied brings out the fact that families are largest in the counties where there is still room for population growth. *The less densely settled counties of Quebec, with the exception of Abitibi which has not been included in this study, are peculiar in that they often contain some very old settlements. Not so closely affected by changing ideals and modes of life, this highly conservative population living in a territory with plenty of room for expansion has steadily maintained the vigour of its growth.*

The rural population of Quebec in 1931 contained only 6,432 families with immigrant male heads, of whom 3,992 had arrived before 1911. It is doubtful if many of these families belong to those counties where population has been increasing. The counties which have increased their population have done so almost entirely by natural increase. This leads to the generalization that a population increasing by natural increase has large households. It was seen in the case of Abitibi county that the average size of households in a population increasing by immigration may be small due to the presence of farmers living by themselves and a large proportion of incompleted families. In fact, the case of Abitibi furnishes a marked contrast with the other growing counties since its families are small. Although the fact that 87 p.c. of its rural population is of French racial origin indicates that its settlers are for the most part drawn from southern Quebec, they may be considered immigrants in the sense that they have been forced to travel a considerable distance to their new homes.

A high birth rate is found in most of the growing counties. This is the major factor contributing towards large families and population increase. The counties where rural population has remained stationary or has decreased have a smaller birth rate. Although the lower birth rates in these counties are sufficiently high to maintain an excess of births over deaths, the increase leaves the farms of the county, emigrating to the United States or moving to the urban parts. No comprehensive statistics on the movement are available but it is unlikely that the surplus rural population in the densely settled counties moved to farms in the less settled districts to any considerable extent. It is much more probable that the latter counties increased in population due to the high birth rate of the native population and the fact that the children remained in the home county. Such a hypothesis explains the large families in the growing counties. In the first place a high birth rate assures a large biological family and, in the second place, children are kept at home, there being sufficient land for them to work on and new land for them to settle when they wish to establish a farm of their own; at the same time the city is too far away to attract them in large numbers.

In Statement CXXIV the size of the farm household, calculated for each county from the multiple regression equation, has been given. It would appear from an observation of the differences between the actual and expected sizes of families that the correlation is slightly non-linear. Lévis has families much larger than the size to be expected from her decreasing population and intensive settlement, emphasizing again the fact that counties on the outskirts of Quebec city and Montreal have large farm households. That the average size of the family for Hull county falls below the expected is not surprising in view of the fact that certain townships have a large non-French element.

Household Size and Type of Farming.—Is the size of the farm household partially dependent on the type of farming practised or is it a factor in determining the type of farming which will be practised? It has already been noticed that the farm household is larger than would be expected from the farm birth rate in the counties close to metropolitan districts. It is quite possible that this can be accounted for by the types of farming practised, *viz.*, market gardening, dairying and poultry raising. Quebec is a general-farming province throughout, but it is probable that the farm family is more self-sufficient in the Lower St. Lawrence Valley and in northeastern Quebec where a large average household is found than in the counties where the average household is small. The increasing emphasis on farm production for the outside market has been suggested as largely responsible for the decrease in the size of Canadian farm family. In Quebec, or at least in the eastern parts, the average size of the farm household has not experienced this decrease, perhaps because the farm families in these counties have remained more self-contained. Two

classes of farm produce, stock sold alive and stock slaughtered, include all the annual revenue derived by the farmer from his live stock exclusive of animal products. Stock sold alive represent largely sales for export and the outside market, while stock slaughtered represent produce used at home or designed for local consumption. Consequently, the ratio of the value of stock slaughtered to stock sold alive will measure the extent to which the farmer is concerned with production for home consumption as compared with production for outside consumption. In the scatter diagram below the value of stock slaughtered expressed as a percentage of the value of stock sold alive for 56 counties has been cross-classified with average size of farm household.

CXXV.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 56 COUNTIES IN QUEBEC, 1931, ACCORDING TO INTERVALS OF VALUE OF STOCK SLAUGHTERED AS PERCENTAGE OF VALUE OF STOCK SOLD ALIVE IN RELATION TO AVERAGE SIZE OF FARM HOUSEHOLD

Value of Stock Slaughtered as P.C. of Value of Stock Sold Alive	Counties — Average Persons per Farm Household						
	5·0 and less than 5·5	5·5 and less than 6·0	6·0 and less than 6·5	6·5 and less than 7·0	7·0 and less than 7·5	7·5 and less than 8·0	Total
20- 39	2						2
40- 59	3	1	2				6
60- 79	1	7	1				9
80- 99	2	3	1	1			7
100-119		2	1		1		4
120-139	1	2	1				4
140-159		1	5			1	7
160-179			4	1	1	1	7
180-199					1		1
200-219					1		1
220-239			1	1			2
240-259				1	1	1	3
260-279							
280-299				1			1
300 and over			2				2
Total counties	9	16	18	5	5	3	56
Mean of percentages	66	91	163	205	186	184	

The ratio of stock slaughtered to stock sold alive is much higher in the counties with large average households than it is in those counties with small average households. Stock slaughtered exceeded stock sold alive in 32 out of 56 counties. In only one of the counties where stock sold alive exceeded stock slaughtered did the average size of the farm household exceed 6·5 persons.

CXXVI.—VALUE OF STOCK SLAUGHTERED AND STOCK SOLD ALIVE, QUEBEC, 1930

Item	Unit	All Counties	Counties Where Stock Slaughtered Exceeded Stock Sold Alive	Counties Where Stock Sold Alive Exceeded Stock Slaughtered
Number of counties	No.	66	34	32
Value of stock slaughtered 1930	$	12,628,977	7,417,863	5,211,114
Value of stock sold alive 1930	$	13,061,033	4,463,470	8,597,563
Total value 1930	$	25,690,010	11,881,333	13,808,677
Number of occupied farms 1931	No.	135,957	73,689	62,268
Rural population 1931	No.	1,060,649	647,634	413,015
Value of stock slaughtered per occupied farm	$	92·89	100·66	83·69
Value of stock sold alive per occupied farm	$	96·07	60·57	138·07
Total value per occupied farm	$	188·96	161·23	221·76
Value of stock slaughtered per person of rural population	$	11·91	11·45	12·62

Value per farm of stock produce in counties where stock sold alive exceeded stock slaughtered exceeded that in counties where stock slaughtered exceeded stock sold alive by $60.53 or 38 p.c. In the former counties stock raising may be regarded as a specialized industry while in the latter counties it is not. The importance in the production picture of farms in the latter counties may be realized, however, from consideration of the fact that they supplied a rural population of 647,634 persons with slaughtered stock valued at $11.45 per person. This compares with $12.62 per person for a rural population of 413,015 supplied by farms in the former counties. That is, the farms in the counties where stock raising was a non-specialized industry produced nearly as much live stock per person for local consumption as did the farms in the counties where stock raising was specialized while the rural population of the former counties amounted to 61·1 p.c. of the rural population of the province.

Household Size and Farm Operation.—The data given in Statement CXXVII are descriptive of farm operation in each county. It will be observed that the number of farm workers per farm does not vary greatly. The large averages for Charlevoix, Champlain, Maskinongé, Laprairie, Hull, Beauharnois, Shefford and Chateauguay reflect large averages for temporary hired labourers and female family workers. The labour of these classes cannot be regarded as equivalent to that of the other classes.

CXXVII.—SUMMARY DATA DESCRIPTIVE OF FARM OPERATION, 56 COUNTIES, QUEBEC, 1930-1931

County	Average Size of Farm Household, 1931	Per Occupied Farm								
		Farm Workers, 1930					Acreage, 1931	Value of		
		Total	Family Workers		Hired Labourers			Products, 1930	Products per Acre, 1930	Implements, 1931
			Male	Female	Permanent	Temporary				
								$	$	$
Chicoutimi	7·80	2·39	2·13	0·05	0·04	0·17	195·1	1,826	9·36	1,110
Rimouski	7·53	2·17	1·81	0·08	0·03	0·25	151·8	1,473	9·70	939
Saguenay	7·52	2·44	1·85	0·44	0·01	0·14	127·0	970	7·64	654
Témiscouata	7·38	1·97	1·75	0·01	0·02	0·19	150·3	1,139	7·58	753
Lac-St-Jean	7·34	2·00	1·74	0·12	0·02	0·12	138·0	1,257	9·11	628
Charlevoix	7·28	3·01	2·12	0·70	0·03	0·16	194·7	1,346	6·91	653
Montmorency	7·26	2·48	1·91	0·23	0·10	0·24	170·9	1,527	8·94	860
Kamouraska	7·12	2·09	1·71	0·13	0·05	0·19	115·4	1,078	9·34	694
Matane	6·90	2·10	1·72	0·18	0·02	0·18	152·6	1,161	7·61	725
L'Islet	6·83	2·16	1·83	0·05	0·03	0·25	152·2	1,174	7·71	669
Champlain	6·69	2·77	1·92	0·45	0·02	0·38	130·4	1,549	11·88	974
Beauce	6·58	2·08	1·51	0·42	0·01	0·14	113·3	1,013	8·94	561
Lévis	6·50	2·14	1·52	0·35	0·05	0·22	122·4	1,473	12·03	729
Bellechasse	6·46	1·75	1·50	0·07	0·01	0·17	120·5	1,062	8·81	475
Quebec	6·44	2·20	1·71	0·07	0·13	0·29	86·3	1,642	19·02	879
Bonaventure	6·43	2·05	1·51	0·29	0·01	0·24	93·0	804	8·65	515
Frontenac	6·40	1·76	1·44	0·12	0·01	0·19	130·4	910	6·98	542
Gaspé	6·37	1·89	1·53	0·19	0·01	0·16	56·9	569	10·00	315
Portneuf	6·37	2·40	1·81	0·29	0·04	0·27	130·5	1,348	10·33	714
Maskinongé	6·33	2·90	1·79	0·54	0·04	0·53	119·6	1,441	12·05	809
St-Maurice	6·30	2·25	1·84	0·03	0·01	0·37	113·4	1,493	13·17	690
Montmagny	6·25	2·50	1·83	0·41	0·02	0·24	129·4	1,174	9·07	620
Arthabaska	6·23	2·28	1·79	0·18	0·02	0·29	149·8	1,502	10·03	709
Dorchester	6·22	2·11	1·72	0·24	–	0·15	123·3	1,079	8·75	557
Lotbinière	6·17	1·80	1·51	0·09	0·01	0·19	132·4	1,177	8·89	566
Verchères	6·13	2·33	1·78	0·05	0·09	0·41	106·9	1,821	17·03	981
Temiskaming	6·08	2·12	1·65	0·18	0·01	0·28	150·7	1,289	8·55	836
Wolfe	6·06	2·20	1·66	0·29	0·02	0·23	145·9	1,372	9·40	609
Labelle	6·05	2·21	1·65	0·11	0·03	0·42	169·2	1,064	6·29	653
Terrebonne	6·01	2·13	1·65	0·06	0·06	0·36	142·0	1,453	10·23	709
Yamaska	6·01	2·33	1·61	0·44	0·03	0·25	91·1	1,311	14·39	709
Mégantic	5·98	2·23	1·59	0·29	0·03	0·32	137·2	1,305	9·51	664
Nicolet	5·97	2·33	1·61	0·42	0·03	0·27	101·3	1,257	12·41	661
Richelieu	5·97	2·25	1·65	0·36	0·03	0·21	108·9	1,415	12·99	691
Joliette	5·94	2·03	1·55	0·07	0·04	0·37	127·3	1,480	11·63	717
Papineau	5·92	2·36	1·65	0·25	0·03	0·43	158·0	1,266	8·01	722
Laprairie	5·92	2·53	1·84	0·11	0·12	0·46	91·6	1,755	19·16	929
Berthier	5·85	2·24	1·64	0·16	0·03	0·41	134·5	1,467	10·91	745
Deux-Montagnes	5·84	2·37	1·79	0·06	0·10	0·42	112·7	1,960	17·39	976
Hull	5·81	2·79	1·76	0·37	0·10	0·56	180·1	1,582	8·78	810
L'Assomption	5·66	2·66	1·62	0·20	0·11	0·73	95·7	1,836	19·18	996
Beauharnois	5·64	2·88	1·75	0·68	0·04	0·41	85·8	1,887	21·99	1,116
Vaudreuil	5·62	2·41	1·63	0·26	0·09	0·43	121·1	1,801	14·87	1,010
Richmond	5·62	2·13	1·61	0·11	0·10	0·31	125·8	1,526	12·13	690
Drummond	5·62	2·37	1·68	0·20	0·05	0·44	136·0	1,359	9·99	675
Napierville	5·59	2·32	1·70	0·29	0·06	0·27	88·4	1,619	18·31	788
Shefford	5·52	2·60	1·62	0·54	0·07	0·37	154·2	1,669	10·82	748
Montcalm	5·48	2·41	1·66	0·31	0·04	0·40	107·6	1,225	11·38	612
Rouville	5·47	2·23	1·55	0·07	0·11	0·50	93·8	1,976	21·07	987
Bagot	5·46	2·02	1·46	0·25	0·02	0·29	93·8	1,389	14·81	696
Soulanges	5·44	2·15	1·64	0·11	0·07	0·33	91·0	1,504	16·53	1,038
Iberville	5·39	2·11	1·49	0·11	0·07	0·44	105·7	1,482	14·02	869
Compton	5·35	2·14	1·49	0·04	0·09	0·52	156·7	1,616	10·31	673
St-Hyacinthe	5·33	2·09	1·61	0·15	0·04	0·29	103·3	1,637	15·85	923
Chateauguay	5·20	2·91	1·58	0·43	0·11	0·79	94·0	1,911	20·33	929
St-Jean	5·14	2·19	1·58	0·04	0·13	0·44	111·5	1,758	15·77	966

CXXVIII.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF 56 COUNTIES IN QUEBEC, 1931, ACCORDING TO AVERAGE NUMBER OF FARM LABOURERS PER OCCUPIED FARM, 1930, IN RELATION TO FAMILY SIZE, 1931

(A) PERMANENT HIRED WORKERS

Average Permanent Hired Labourers per Farm	Counties — Average Persons per Farm Household						
	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	Total
0·00			1				1
0·01			7	1		1	9
0·02	1		3	2	2		8
0·03		5	2	1	1	1	10
0·04	2	2	2			1	7
0·05		1		1	1		3
0·06		1	1				2
0·07	2	1					3
0·08							
0·09	1	1	1				3
0·10		3			1		4
0·11	2	1					3
0·12		1					1
0·13	1		1				2
Total	9	16	18	5	5	3	56
Unweighted mean[1]	0·08	0·06	0·03	0·03	0·04	0·03	

(B) TEMPORARY FARM WORKERS

Average Temporary Farm Workers per Farm	Counties — Average Persons per Farm Household						
	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	Total
0·10–0·14				1	1	1	3
0·15–0·19			5	1	3	1	10
0·20–0·24		1	3	1	1		6
0·25–0·29	2	2	5	1		1	11
0·30–0·34	1	2					3
0·35–0·39		2	2	1			5
0·40–0·44	3	6	2				11
0·45–0·49		1					1
0·50–0·54	2		1				3
0·55–0·59		1					1
0·60–0·64							
0·65–0·69							
0·70–0·74		1					1
0·75–0·79	1						1
Total	9	16	18	5	5	3	56
Unweighted mean[1]	0·44	0·40	0·28	0·23	0·18	0·19	

[1]The unweighted means are obtained by adding the averages given in Statement CXXVII for counties with families in each size interval and dividing the total so obtained by the number of counties.

CXXVIII.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF 56 COUNTIES IN QUEBEC, 1931, ACCORDING TO AVERAGE NUMBER OF FARM LABOURERS PER OCCUPIED FARM, 1930, IN RELATION TO FAMILY SIZE, 1931—Con.

(C) MALE FAMILY WORKERS

Average Male Fnmily Workers	Counties — Average Persons per Farm Household						
	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	Total
1·40–1·44			1				1
1·45–1·49	3						3
1·50–1·54			4	2			6
1·55–1·59	3	2					5
1·60–1·64	2	6	1				9
1·65–1·69	1	3	4				8
1·70–1·74		1	2	1	2		6
1·75–1·79		3	3		1		7
1·80–1·84		1	3	1		1	6
1·85–1·89						1	1
1·90–1·94				1	1		2
1·95–1·99							
2·00–2·04							
2·05–2·09							
2·10–2·14					1	1	2
Total	9	16	18	5	5	3	56
Unweighted menn[1]	1·56	1·67	1·67	1·70	1·85	1·93	

It is evident from Diagram A that there is a negative correlation between the number of permanent hired labourers per farm and the average size of household. Obviously, the presence of hired workers living with the farm family counteracts rather than contributes to the dispersion in average household size. Permanent hired labourers are more numerous in the counties where families are small and there is a lack of family workers. The same observation holds true of temporary farm labourers but the correlation is more marked. The head of a large family can use his family as a labour reserve, drawing on it when work is plentiful while the farmer with a small family must resort to hired labour. In contrast, it is evident from Diagram C that there is a positive correlation between male family workers per farm and household size. The high birth rate prevailing in the large-family counties assures a large number of children and evidently a good percentage of these stay at home after leaving school and work on the home farm. From the large average number of full-time family workers on farms in the large-family counties it might be inferred that children tend to stay at home after marriage and work on the home farm. If so, they greatly swell the average size of the household since, instead of breaking away from home and forming a small new household, they stay at home until they have a family of some size. There are many large households and few very small households.

The means at the bottoms of Diagrams A, B and C of Statement CXXVIII have been added in order to determine whether any relationship exists between average size of farm household and total number of permanent male workers per farm.

Persons per Farm Household	Mean of Average Male Workers per Farm
5·0 and less than 5·5	2·08
5·5 " " " 6·0	2·13
6·0 " " " 6·5	1·98
6·5 " " " 7·0	1·96
7·0 " " " 7·5	2·07
7·5 " " " 8·0	2·15

Apparently the number of farm workers has little bearing on the size of the farm household. Consequently, the fact that average farm workers per farm in Canada has tended to increase from census to census cannot be regarded as evidence that the size of the average farm household has not decreased.

CXXIX.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 56 COUNTIES IN QUEBEC, 1931, ACCORDING TO AVERAGE ACREAGE PER OCCUPIED FARM IN RELATION TO AVERAGE SIZE OF FARM HOUSEHOLD

Average Acreage per Occupied Farm	Counties — Average Persons per Farm Household						
	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	Total
Less than 80			1				1
80 and less than 90		2	1				3
90 " " " 100	4	2	2				8
100 " " " 110	3	2	1				6
110 " " " 120	1	1	2	1	1		6
120 " " " 130		3	3	1		1	8
130 " " " 140		3	3	1	1		8
140 " " " 150			3				3
150 " " " 160	1	2	1	2	1	1	8
160 " " " 170			1				1
170 " " " 180					1		1
180 " " " 190		1			1		2
190 " " " 200						1	1
Total	9	16	18	5	5	3	56
Unweighted mean[1]	106·4	122·4	116·7	134·2	153·9	158·0	
Acres per person[2]	20·3	21·3	18·7	19·9	21·2	20·4	

[1]See footnote to Statement CXXVIII.
[2]Acres per person obtained by dividing unweighted mean acres by mid-point of household size interval.

The above scatter diagram reveals a positive correlation existing between average size of farm household and acres per farm so that acres per person remains more or less constant with increasing family size. Smaller farms support smaller families than the larger farms. In those counties where all the land has been appropriated and farms, as a result, are small, families are small. In the counties where plenty of land is available and farms are large, families are large. However, it will be seen later that the smaller farms have a higher percentage of improved land. Gaspé is an exception to the above generalization since, while the average household is relatively large, 6·37 persons, there are only 56·9 acres per farm, 84,892 of the 306,457 occupied farms consisting of less than 50 acres. The large farm household in Gaspé is explained by the high birth rate but according to Statement CXXII, page 133, Gaspé ranks considerably lower in household size than it does in birth rate. Evidently the Gaspé farms are unable to support the same population as those in the neighbouring counties and the family does not stay together as long. Children are forced to leave home and seek their living elsewhere. Many of the Gaspé farmers are only part-time farmers devoting their time to fishing, farming and the forest industries. Although they are a prolific race their families tend to disperse since fishing and lumbering do not provide work for the whole family to the same extent as does non-specialized farming. It will be seen later that in Nova Scotia many of the counties where the birth rate is high have a small average farm household due to the smallness of the family which the farm can support.

It will be observed from Statement CXXX below that there is little relationship between average household size and the value of farm implements and machinery per occupied farm. Evidently, the mechanization of the farm is not a factor in reducing the average size of the farm household nor do large farm families tend to avoid the use of machinery.

CXXX.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF 56 COUNTIES IN QUEBEC, 1931, ACCORDING TO AVERAGE VALUE PER OCCUPIED FARM OF (A) FARM IMPLEMENTS AND MACHINERY, (B) FARM PRODUCTS, IN RELATION TO AVERAGE SIZE OF FARM HOUSEHOLD

(A) FARM IMPLEMENTS AND MACHINERY

Average Value of Farm Implements and Machinery per Occupied Farm	Counties — Average Persons per Farm Household						
	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	Total
$ 300-$ 349			1				1
350- 399							
400- 449							
450- 499			1				1
500- 549			2				2
550- 599			2	1			3
600- 649	1		2		1		4
650- 699	2	5	2	1	2	1	13
700- 749		4	4	2			10
750- 799		1			1		2
800- 849		1	2				3
850- 899	1		1		1		3
900- 949	2	1				1	4
950- 999	2	2	1	1			6
1,000- 1,049	1	1					2
1,050- 1,099							
1,100- 1,149		1				1	2
Total	9	16	18	5	5	3	56
Unweighted mean[1]	855	809	660	732	718	901	

(B) FARM PRODUCTS

Average Value of Farm Products per Occupied Farm	Counties — Average Persons per Farm Household						
	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	Total
Less than $800			1				1
$ 800-$ 899			1				1
900- 999			1			1	2
1,000- 1,099			3	1	1		5
1,100- 1,199			2	2	1		5
1,200- 1,299	1	2	1		1		5
1,300- 1,399	1	2	3		1		7
1,400- 1,499	1	3	3	1		1	9
1,500- 1,599	1	2	1	1	1		6
1,600- 1,699	2	2	1				5
1,700- 1,799	1	1					2
1,800- 1,899		3	1			1	5
1,900- 1,999	2	1					3
Total	9	16	18	5	5	3	56
Unweighted mean[1]	1,611	1,574	1,251	1,274	1,269	1,423	

[1] See footnote to Statement CXXVIII, page 141.

Statement CXXX (B) relates household size and value of farm produce. There is not a very marked correlation between the two since, although the more productive farms are generally in the counties with the smaller average farm households, value of produce per farm is relatively high for Chicoutimi, the county with the largest average farm household. While the value of farm produce may be lower in the large-family counties, cash expenses may also be less. It has been pointed out that the farms with large families are more self-sufficient with regard to farm labour, and investigation will reveal that taxes and debt are lower. Value of farm produce alone does not measure the profitableness of the farm and the satisfactions afforded the operator and his family.

Size of Household in Ninety-One Sample Parishes.—The following scatter diagrams cross-classify average size of farm household with size of farm and density of population for 91 sample parishes or townships. In every township the rural population was at least 90 p.c. French in racial origin and at least 70 p.c. of the people were living on farms. The parishes of each county were arranged in alphabetical order and every seventh one was selected, subject to the conditions just enumerated. When the seventh did not fulfil these conditions, the one that did, closest to it in the alphabetical list, was selected. In addition, the farm population of each parish or township had to exceed 400 persons. No parishes were selected from those counties with a considerable non-French element and which were omitted in the study of household size by counties.

CXXXI.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF THE 91 SAMPLE TOWNSHIPS IN QUEBEC, 1931, ACCORDING TO (A) AVERAGE ACREAGE, (B) AVERAGE IMPROVED ACREAGE PER OCCUPIED FARM, IN RELATION TO AVERAGE SIZE OF FARM HOUSEHOLD

(A) ACREAGE

Average Acreage per Occupied Farm	Townships — Average Persons per Farm Household									
	4·0 and under 4·5	4·5 and under 5·0	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	8·0 and under 8·5	Total
40- 40	1									1
50- 59										
60- 69	1		1							2
70- 79		1	1			1				3
80- 89	1	1		1			1			4
90- 99		1	1	3	1					6
100-100		1	1							2
110-119	1			1	2	2				6
120-129		1	3	3	6	5				18
130-139		1	1	4	6	2	1		1	16
140-149				2	1		3		1	7
150-159				2	2	1	1	1		7
160-169		1	1		1	1	1	1	1	7
170-170					1		1	2		4
180-189				1		1			1	3
100-190				1		1				2
200-209						2				2
210-219						1				1
220-229										
Total	4	7	9	18	20	17	8	4	4	91
Unweighted mean	80·0	85·0	88·7	92·4	121·5	147·9	143·9	165·3	155·8	
Acres per person	18·8	18·1	16·9	17·6	19·4	21·9	20·4	21·3	18·9	

CXXXI.—SCATTER DIACRAMS SHOWINC FREQUENCY DISTRIBUTION OF THE 91 SAMPLE TOWNSHIPS IN QUEBEC, 1931, ACCORDING TO (A) AVERACE ACREACE, (B) AVERACE IMPROVED ACREAGE PER OCCUPIED FARM, IN RELATION TO AVERAGE SIZE OF FARM HOUSEHOLD.—Con.

(B) IMPROVED ACREAGE

Improved Average Acreage per Occupied Farm	Townships — Average Persons per Farm Household									
	4·0 and under 4·5	4·5 and under 5·0	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	8·0 and under 8·5	Total
30 and less than 35	1				1					2
35 " " " 40					1					1
40 " " " 45	1			1	1					3
45 " " " 50		1		2	3			1		7
50 " " " 55	1	1		1	2	2				7
55 " " " 60				2						2
60 " " " 65			1	3		1	2			7
65 " " " 70		1	3	1		2	1			8
70 " " " 75	1		2	2	2	3	2	1		13
75 " " " 80		1	2	2	1	2		1		9
80 " " " 85		1			1	1			2	5
85 " " " 90				1	3	1				5
90 " " " 95		1	1			2		1	1	6
95 " " " 100		1		1	1	1			1	5
100 " " " 105				2			2			4
105 " " " 115					2					2
110 " " " 115					1		1			2
115 " " " 120										
120 " " " 125					1					1
125 " " " 130						1				1
130 " " " 135										
135 " " " 140						1				1
Total	4	7	9	18	20	17	8	4	4	91
Unweighted mean	67·1	74·0	72·8	69·4	74·0	81·1	81·1	71·2	88·9	
Improved acres per person	15·8	15·6	13·9	12·1	11·8	12·0	11·2	9·2	10·8	
Unimproved acres per person	3·0	2·5	3·0	5·5	7·6	9·9	9·2	12·1	8·1	

In the 4 parishes with the smallest average farm households the average farm household came in the interval 4·0 to 4·5 persons per household. In the 4 parishes with the largest avcrage farm houscholds the averages came in the interval 8·0 to 8·5 persons per household. Thc modal townships had from 6·0 to 6·5 persons per farm household. Cross-classifying averagc acres per farm and average persons per household in Statemcnt CXXXI (A), a positive correlation is found so that acres per person remain fairly constant with increasing size of household. A similar observation was made in the cross-classification of the same avcrage for the county as a whole in Statement CXXIX. It is evident, howcver, from Statement CXXXI (B), that the correlation is not so marked whcn improved acreage per farm is cross-elassified with average size of household, with the result that improved acreage per person tends to decrease with increasing size of household. The lack of improved land, however, is compensated for by a large acreage of unimproved land.

In Statement CXXXII the density of rural population per 100 acres has been cross-classified with averge size of farm household. It appears at first that there is little relationship between population density and family size. This is surprising in view of the negative correlation, mentioned on page 138, between household size and percentage of land occupied for each county.

CXXXII.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF THE 91 SAMPLE TOWNSHIPS IN QUEBEC, 1931, ACCORDING TO RURAL POPULATION DENSITY IN RELATION TO AVERAGE SIZE OF FARM HOUSEHOLD

Rural Population per 100 Acres	Townships — Average Persons per Farm Household									
	4·0 and under 4·5	4·5 and under 5·0	5·0 and under 5·5	5·5 and under 6·0	6·0 and under 6·5	6·5 and under 7·0	7·0 and under 7·5	7·5 and under 8·0	8·0 and under 8·5	Total
0·50- 0·99					1					1
1·00- 1·49				1						1
1·50- 1·99				1	3	1				5
2·00- 2·49	1				1		1			3
2·50- 2·99		2	1	3	2	2	1			11
3·00- 3·49		1	1	2	1	4	1	2		12
3·50- 3·99			1	1	1	1				4
4·00- 4·49		1	1	2		1	1			6
4·50- 4·99				2	1				1	4
5·00- 5·49	1	3		3	2	2	1	1	1	14
5·50- 5·99			2	1	3	2	2			10
6·00- 6·49				1	3	1	1	1		7
6·50- 6·99						1			2	3
7·00- 7·49			1	1	1					3
7·50- 7·99	1									1
8·00- 8·49					1	1				2
8·50- 8·99						1				1
9·00- 9·49										
9·50- 9·99			1							1
10·00-10·49			1							1
10·50-10·99										
11·00-11·49										
11·50-11·99										
12·00-12·49										
12·50-12·99										
13·00-13·49	1									1
Total	4	7	9	18	20	17	8	4	4	91
Mean density	7·10	4·14	5·91	4·40	4·35	4·75	4·48	4·58	5·78	
Density divided by family size	1·67	0·87	1·13	0·77	0·69	0·70	0·67	0·59	0·70	

From this correlation it was inferred that families were large in the counties where the land was not densely settled and there was room for population expansion. In Quebec, however, new districts are colonized one parish at a time so that it is quite possible that a new parish, even though it is surrounded by vast unsettled districts, will have a fairly high density of population. In such districts there will be no limit to the rate at which population can increase since the excess will spread out and found new parishes. This is the basis of the steady and uninterrupted population growth in North Eastern Quebec. A high birth rate ensures large families and a large natural increase in population and the home farm is big and self-contained so that children can stay at home until they are ready to assume family responsibilities and settle on a new farm

of their own. The fact that it is not necessary for young men to travel far to find a farm and that they will still be living under conditions familiar to them, although fraught with hardships, enables them to marry young and found a large family.

Summary.—The farm families of Eastern Quebec are large due to the high birth rate and the fact that the land is able to absorb the resulting natural increase in population. Although the families in those sections of Quebec which have for a long time been densely settled tend to be larger than the families in Ontario and other parts of Canada, they are much smaller than in Eastern Quebec. This is partly due to a lower birth rate concomitant with a higher density of population and partly to the continued emigration from the rural parts of th se counties, many of which decreased in population from 1921 to 1931. *Differential fertility from county to county in rural Quebec which cannot be explained on the basis of race, religion or culture appears to be the result of variation in the density of population.* The farm population in the small-family counties of Quebec seems to have reached the maximum which can be maintained under present methods of farming while that in the large-family counties will continue to increase. The increase in the farm population which can be absorbed by the counties of Eastern Quebec will, however, be provided by the large natural increase within the counties themselves. Immigration could probably be satisfactorily absorbed only by the counties in the extreme north, *viz.*, Abitibi and Temiskaming, but it is only the hardy immigrants who could endure the cold winters in these northern counties.

PRINCE EDWARD ISLAND

The rural population of Prince Edward Island has declined steadily for each decade since 1881 from a maximum of 95,693 to 67,653 in 1931 while there has been only a slight increase in the urban population. The decline has resulted from a large continuous emigration to other parts of Canada and to the United States. Since the emigrants are generally young persons, a high percentage of old persons is left in Prince Edward Island. Of the farm operators in Prince Edward Island, 30·7 p.c. were over 60 years of age in 1931 as compared with 20·5 p.c. in Canada as a whole. Since most of the children of operators over 60 have left home, they have small families so that the age distribution of Prince Edward Island farm operators tends to reduce the average size of the farm household.

CXXXIII.—AVERAGE SIZE OF FARM HOUSEHOLD AND BIRTH RATES, PRINCE EDWARD ISLAND, BY COUNTIES, 1930-1931

County	Persons per Farm Household	Birth Rate, 1930-32[1]	
		Crude	Standardized
Prince Edward Island	4·59	21·4	25·4
Prince	4·88	25·5	30·5
Queens	4·45	20·0	22·0
Kings	4·42	17·6	23·7

[1]Exclusive of towns of 5,000 population and over.

The average farm household is somewhat larger in Prince county than in Queens or Kings and the birth rate is higher, reflecting the fact that 26 p.c. of its rural population is of French racial origin. In Township 15 of Prince county where the population is 95 p.c. French, the average size of the farm household is 5·73 persons.

NOVA SCOTIA

Size of Farm Household.—The average size of the farm household according to Statement CXVII, page 130, was 4·67 persons, slightly above that for Prince Edward Island but below that for New Brunswick. By referring to Statement CXIX, page 130, it will be seen that there is an even higher percentage of farm operators 60 years of age and over than in Prince Edward Island, a result of continued emigration; the rural population has declined from a maximum of 377,030 in 1881 to 281,192 in 1931.

CXXXIV.—AVERAGE SIZE OF FARM HOUSEHOLD AND RELEVANT DATA, NOVA SCOTIA, BY COUNTIES, 1930-1931

County	Persons per Farm House-hold, 1931	Acres per Occupied Farm, 1931	Value of Products per Farm, 1930	Birth Rate, 1930-32[1]		Rural Population, 1931		
				Crude	Stan-dardized	As P.C. of 1921	P.C. of French Racial Origin	P.C. Roman Catholic
			$					
Nova Scotia	4·67	109·1	826	22·5	24·8	95	6·4	14·67
Inverness	5·15	111·8	702	19·3	28·5	86	26·4	71·7
Halifax	4·94	106·4	616	23·5	27·6	103	8·5	23·8
Cape Breton	4·89	87·0	763	22·1	28·3	102	10·0	58·0
Hants	4·84	139·7	616	24·9	29·2	101	1·5	5·1
Digby	4·83	87·5	581	22·4	29·0	92	52·8	56·2
Yarmouth	4·81	66·8	537	20·4	26·9	91	43·7	45·8
Kings	4·74	95·0	1,687	20·2	22·4	97	2·1	4·7
Colchester	4·70	141·6	1,122	23·6	29·1	97	2·7	3·2
Shelburne	4·68	100·1	388	22·7	27·8	89	2·5	1·3
Antigonish	4·64	117·5	820	17·0	22·2	84	25·1	87·6
Lunenburg	4·59	80·9	597	18·9	21·2	92	7·0	1·7
Richmond	4·55	71·5	378	20·8	29·2	88	58·7	79·3
Cumberland	4·52	153·2	976	22·5	26·4	94	4·8	8·4
Victoria	4·52	122·6	654	16·6	23·6	91	1·8	32·8
Guysborough	4·50	101·7	432	24·3	31·6	93	11·7	30·8
Queens	4·48	95·4	433	22·5	25·2	114	4·7	6·2
Annapolis	4·27	133·8	1,063	19·5	23·7	88	2·2	3·4
Pictou	4·20	117·9	935	18·3	21·5	95	3·3	9·5

[1]Exclusive of towns of 5,000 and over.

On referring to Statement CXXI, page 132, it will be seen that the coefficient of dispersion in the average sizes of farm households for the Nova Scotian counties is less than for any of the other provinces with the exception of Prince Edward Island. The fact that the variations in the average sizes of the farm household from county to county in Nova Scotia are not marked causes them to be of less significance than in the other provinces, particularly since the counties are not homogeneous within themselves.

The Acadian Families.—An interesting feature of the racial composition of the population of rural Nova Scotia is the two *blocs* of Acadian French, one in Inverness county, and one in Digby and Yarmouth counties. The populations of the townships of Chéticamp, Margaree Harbour East and St. Joseph, in Inverness county, were well over 90 p.c. of French racial origin and the average size of the farm household in these townships was 6·16 persons. Their total population decreased by 3 p.c. during the decade 1921-31 so that the average size of the farm household compares closely with that in the French counties of Quebec which suffered the same decrease. The average size of the farm household for the 17 solid French townships in Digby and Yarmouth counties was 5·27 persons, larger than the average for Nova Scotia as a whole, but considerably below the prevailing household size in the French counties of Quebec. The 17 townships were Chéticamp, Church Point, Comeauville, Concession and Lower Concession, Grosses Coques, Meteghan N., Meteghan River, St. Bernard, St. Mary's, Salmon River and Saulnierville in Digby county, and Amirault Hill, Belleville, Eel Brook, Pubnico W. and The Islands in Yarmouth county. Their total population was 12,738 in 1921 and 11,069 in 1931 so that it decreased by 13 p.c. during the decade. Since the birth rate for these townships is not available, it is impossible to ascertain to what extent household size is determined by fertility. At the same time, the marked decrease in population explains the small size of the average household. Although there is a vast area of unoccupied land in Digby and Yarmouth counties, it is not suitable for farming, the smaller area of available farm land having been already occupied. The farms, according to Statement CXXXIV, were small, averaging 87·5 acres per farm in Digby county and 66·8 acres per farm in Yarmouth. Average value of farm produce in 1930 was $581 for Digby county and $537 for Yarmouth county. The small and unproductive farms of these counties cannot support large families so that, even though the birth rate be high, families must be small. It is true that fishing provides a complementary source of revenue but it would appear that the families of part-time fishermen and farmers are smaller than the families of full-time farmers, even though the former class be more prolific, if anything, than the latter. We have already observed that farm households are smaller in Gaspé than would be anticipated from the birth rate. The explanation would appear to be that children leave the small part-time farms sooner than they leave the larger full-time farms. Fishing is an occupation which requires training

and, what is more important, equipment. It is more difficult for a young member of the family to fit into the fishing industry than into farming; the result is that he must leave home to seek a living. Another hypothesis is that very large families leave the district since the small farms and limited revenue from fishing will not support them. The fisherman's income is largely determined by factors over which he has no control, *viz.*, the amount of fish caught and the market. He works hard in any event and to work harder would not improve his lot. It would appear, then, that *in counties where the produce of the farm and subsidiary occupations is limited, due to either lack of land and unfertile soil or the dependence on the cash income of a crop produced by specialized farming, the farm household tends to be small. In counties where farm produce can be augmented by the application of the labour resources of a large family, the farm household tends to be large.*

Continued emigration from a county reduces the size of the average household, first, since members of the family are leaving home and, secondly, because of its bearing on the age distribution of family heads. Emigrants are generally young or approaching middle age so that a country losing in population through emigration will have a low proportion of middle-aged persons. The family heads will be elderly people and their families will be small since the children have left home.

Household Size by Counties.—According to Statement CXXXIV, the farm household is largest in Inverness county, reflecting the fact that 26 p.c. of the population is of French racial origin. The large average household in Halifax and Cape Breton counties is in line with the observation made when studying household size in Quebec that farm households are comparatively large in counties surrounding large cities. The rural population of these counties increased somewhat between 1921 and 1931. It is interesting to observe that, although Richmond county contains the largest French element of any of the counties, it ranks well down in average size of households, family size being limited by the incapacity of the farms to support large families. The check on family size has probably resulted from a partial check on the birth rate and by emigration. The more productive racial strains in Nova Scotia would appear to be confined to these counties which can support only a small farm population with the result that there has been a continued emigration which has tended to reduce the natural increase in population due to its effect on the age distribution of the population. Kings, Colchester, Cumberland, Annapolis and Pictou counties which include the most fertile land in the province are inhabited largely by British races.

NEW BRUNSWICK

At the time of the 1931 Census the population of New Brunswick was 56·9 p.c. of British racial origin, 39·7 p.c. of French racial origin and 3·4 p.c. of other and unspecified origins. The British races were confined largely to the South and West and the French to the North and East.

CXXXV.—AVERAGE SIZE OF FARM HOUSEHOLD AND RELEVANT DATA, NEW BRUNSWICK, BY COUNTIES, 1930-1931

County	Persons per Farm Household, 1931	Acres per Occupied Farm, 1931	Value of Products per Farm, 1930	P.C. of Land Occupied [1], 1931	Birth Rate, 1930-32 [1]		Rural Population, 1931	
					Crude	Standardized	As P.C. of 1921	P.C. of French Racial Origin
			$					
New Brunswick	5·45	122·0	895	23·4	26·2	28·5	106	16·4
Madawaska	6·40	135·3	946	30·2	36·6	45·4	119	96·1
Gloucester	6·34	60·4	482	25·8	37·5	46·2	109	85·5
Restigouche	6·14	100·5	667	8·6	36·9	44·0	127	70·6
Kent	6·06	100·1	725	27·6	31·0	41·3	103	77·3
Northumberland	5·65	88·2	587	9·9	27·0	32·2	103	27·7
Victoria	5·60	132·5	1,155	14·3	29·2	35·1	124	28·2
Westmorland	5·41	114·7	1,047	46·2	21·3	24·9	107	44·7
Sunbury	4·98	177·0	943	18·9	24·4	28·1	114	10·1
York	4·97	171·5	1,062	20·5	22·6	25·4	98	2·0
Carleton	4·87	158·0	1,423	48·4	20·6	23·7	99	1·1
Albert	4·84	155·2	917	38·1	21·6	25·8	89	1·1
Charlotte	4·58	129·5	872	25·0	20·5	22·4	100	1·7
Queens	4·58	172·9	910	31·7	19·5	24·4	99	3·1
Saint John	4·53	132·5	1,341	16·8	16·0	16·7	106	5·9
Kings	4·48	163·7	1,227	52·8	18·3	21·7	98	1·4

[1]Exclusive of towns of 5,000 and over.

New Brunswick ranks second only to Quebec among the provinces in average size of farm household. The average household was larger throughout New Brunswick than it was in Nova Scotia, indicating that the small average in Nova Scotia may have been the result of the pressure of population density. It ranges in size from 6·40 persons per farm household in Madawaska to 4·48 in Kings county. Seven counties, Madawaska, Gloucester, Restigouche, Kent, Northumberland, Victoria and Westmorland bave large households while the remaining 8 have small households. The average size of the farm household appears to be closely connected with the percentage of the rural population of French racial origin. A feature of the population growth of rural New Brunswick has been a spread from the eastern counties of Quebec into New Brunswick. Of the 136,999 French living in New Brunswick in 1931, 7,991 were born in Quebec. A highly prolific race, these peoples have multiplied so that the French population of New Brunswick has increased from 79,979 in 1901 to 136,999 in 1931.

It has been found, in a study made at the Bureau of Statistics by Mr. René de Cotret, that most of the French of Madawaska county originated in Quebec while those of Gloucester, Kent and Westmorland counties are largely Acadians. In the townships of the two last-mentioned counties, where the population was over 85 p.c. French, we find the average size of the farm household to be 6·35 persons, *i.e.*, the Acadians of New Brunswick had larger households than the Acadians of Nova Scotia. Comparing the average sizes of the households of the Quebec and Acadian French in New Brunswick, we find them to be approximately the same. Consequently, it would appear that Acadian and Quebec French living in similar environments tend to have families of the same size.

ONTARIO

Farm Facilities.—Ontario has the smallest average farm household, 4·51 persons per household, of any of the Eastern Provinces due partly to the small French element in its population.

CXXXVI.—FARM ACREAGE, FARM PRODUCE AND FARM FACILITIES, CANADA AND PROVINCES, 1930-1931

Province	Per Occupied Farm			P.C. of Farms Reporting		
	Acreage, 1931	P.C. of Land Improved, 1931	Value of Products per Farm, 1930	Automobile	Telephone	Radio
			$			
CANADA	223·9	52·6	1,322	41·6	32·1	16·4
Prince Edward Island	92·6	64·3	1,271	29·1	21·6	10·9
Nova Scotia	109·1	19·6	826	25·3	26·0	12·1
New Brunswick	122·0	32·0	895	29·4	20·9	7·8
Quebec	127·3	52·0	1,359	18·9	19·5	6·3
Ontario	118·9	58·1	1,715	60·3	54·1	21·5
Manitoba	279·2	56·3	1,290	45·1	24·2	18·1
Saskatchewan	407·9	60·3	1,081	45·8	34·3	20·2
Alberta	400·1	45·5	1,187	42·1	17·1	17·7
British Columbia	135·8	19·9	1,396	30·5	23·6	23·6

From Statement CXXXVI, it will be seen that value of farm produce per occupied farm in Ontario considerably exceeded that for any other province. Farms were not large as compared with those in other provinces, but a high percentage of the land was improved. Ontario had the highest percentages of its farms reporting automobiles and telephones and was second only to British Columbia in the percentage reporting radios. Evidently these facilities and large families do not go together, the Ontario farmer devoting his margin of profit to the accumulation of modern farm comforts and conveniences rather than to the raising of large families.

Birth Rate and Productivity of Farms.—It would appear from Statement CXXXVI that there is an inverse correlation between value of produce per farm and fertility. That is, biological families are larger in the less productive farming counties than in the more productive counties. Despite the apparent profitableness of farming in Ontario, the rural population has grown slowly, increasing from 935,978 in 1901 to 1,335,691 in 1931 or by 43 p.c. During the same period the urban population increased from 1,246,969 to 2,095,992 or by 68 p.c. A large share of the latter increase must have been derived from the rural population, explaining the

CXXXVII.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF THE 55 COUNTIES IN ONTARIO, 1931, ACCORDING TO INTERVALS OF STANDARDIZED BIRTH RATE (1930-1932) IN RELATION TO VALUE OF FARM PRODUCE, 1930

Standardized Birth Rate, 1930-32[1]	Counties — Value of Farm Produce per Farm, 1930										
	$ 700 and less than 900	$ 900 and less than 1,100	$ 1,100 and less than 1,300	$ 1,300 and less than 1,500	$ 1,500 and less than 1,700	$ 1,700 and less than 1,900	$ 1,900 and less than 2,100	$ 2,100 and less than 2,300	$ 2,300 and less than 2,500	$ 2,500 and less than 2,700	Total
15 and under 16							1				1
16 " " 17							1				1
17 " " 18						1					1
18 " " 19				1	2		1			1	5
19 " " 20				2	1	2	1				6
20 " " 21				1	4	1	3				9
21 " " 22					1	2	2		1		6
22 " " 23		1			1	2			1		5
23 " " 24						1	1	1			3
24 " " 25						1					1
25 " " 26	2										2
26 " " 27		1		1	1						3
27 " " 28				1	1	1					3
28 " " 29											
29 " " 30		1	1								2
30 " " 31		1	1								2
31 " " 32					1						1
32 " " 33											
33 " " 34											
34 " " 35	1	1									2
35 " " 36					1						1
36 " " 37											
37 " " 38											
38 " " 39											
39 " " 40			1								1
Total	3	5	3	6	13	11	10	1	2	1	55
Mean of birth rates	28·5	28·7	33·2	22·0	23·3	21·9	19·8	23·5	22·0	18·5	

[1]Exclusive of towns of 5,000 and over.

slowness of its increase. The movement from farm to city has been a factor in reducing the size of the farm household in Ontario since families are broken up early and there is a large proportion of farm operators over 60 years of age, 25·9 p.c. according to Statement CXIX, page 130. Ontario has, however, a lower proportion of its farm operators over 60 years of age than Nova Scotia, Prince Edward Island or New Brunswick.

Household Size by Counties.—In Statement CXXXVIII the average size of the farm household is given for the 55 Ontario counties. According to Statement CXXI, page 132, Ontario ranked fifth among the provinces in the dispersion from county to county in average size of farm household. The average did not vary to the same extent from county to county as it did in Quebec, New Brunswick, Alberta or British Columbia, but varied more than it did in Nova Scotia, Manitoba and Saskatchewan. The fact that the census divisions in Western Canada are larger than the counties of the East would tend to lower the dispersion in the averages in the Western Provinces.

Household Size in Northern Ontario.—Nipissing county has the largest farm household, 5·89 persons per household and Kenora the smallest, 3·74 persons per household, the latter being the only county in the Eastern Provinces where the average farm household consists of less than 4 persons. Since both of these counties are in Northern Ontario, the disparity in the sizes of their average farm households is extremely interesting. In Statement CXXXIX the average sizes of farm households for the Northern Ontario counties are given separately.

CXXXVIII.—AVERAGE SIZE OF FARM HOUSEHOLD AND RELEVANT DATA, ONTARIO, BY COUNTIES, 1930-1931

County	Persons per Farm Household, 1931	Acres per Occupied Farm, 1931	Value of Products per Farm, 1930	P.C. of Land Occupied, 1931	Birth Rate, 1930-32[1]		Rural Population, 1931	
					Crude	Standardized	As P.C. of 1921	P.C. of French Racial Origin
			$					
Ontario	4·51	118·9	1,715	9·8	20·1	19·3	109	10·4
Nipissing	5·89	170·9	1,159	7·1	31·9	39·2	116	58·8
Russell	5·63	103·0	1,626	90·2	28·7	35·5	92	76·4
Sudbury	5·62	179·6	1,089	3·3	28·3	34·0	116	47·7
Prescott	5·54	108·8	1,612	87·2	26·4	31·5	93	78·9
Renfrew	5·30	199·8	1,572	46·5	22·7	26·9	95	10·0
Waterloo	5·21	97·2	2,456	91·7	20·4	22·6	107	1·6
Glengarry	5·02	115·4	1,704	91·8	22·0	27·4	90	47·7
Essex	4·88	67·5	1,918	83·1	21·9	23·1	119	28·0
Parry Sound	4·78	214·5	1,114	17·8	24·8	29·5	94	11·1
Carleton	4·77	120·0	2,044	86·4	19·1	21·3	100	1·6
Hastings	4·75	156·1	1,620	50·8	23·2	27·7	98	6·4
Stormont	4·69	103·3	1,855	89·8	22·2	24·6	121	39·3
Haliburton	4·68	191·2	910	17·1	25·8	30·5	97	2·3
Timiskaming	4·67	160·0	1,012	8·2	26·7	29·4	173	20·9
Manitoulin	4·67	214·5	1,392	26·9	24·3	26·6	101	2·8
York	4·63	76·9	2,048	80·5	20·6	18·4	172	1·2
Frontenac	4·63	187·9	1,735	53·0	19·2	23·0	96	4·7
Muskoka	4·60	196·5	1,030	32·2	21·0	22·5	101	6·1
Prince Edward	4·57	110·9	1,911	94·5	18·6	21·8	95	1·5
Peterborough	4·56	157·5	1,721	47·2	19·1	22·4	102	1·9
Lincoln	4·56	57·3	1,720	85·0	16·0	17·0	103	1·5
Algoma	4·54	141·0	1,229	2·3	24·4	30·5	97	13·6
Wentworth	4·52	73·7	1,987	86·6	14·5	15·0	82	1·5
Dundas	4·52	98·8	2,070	94·5	17·6	20·7	91	7·1
Welland	4·52	72·2	1,386	75·0	18·0	19·5	107	2·4
Kent	4·51	85·8	1,878	95·5	20·5	22·6	107	13·0
Simcoe	4·49	113·5	1,648	80·9	17·5	20·8	100	8·0
Halton	4·49	92·6	2,048	93·5	15·9	16·3	103	0·6
Brant	4·49	84·1	1,637	87·2	16·4	18·4	98	1·1
Addington	4·49	176·9	1,406	33·8	22·8	27·8	95	6·3
Peel	4·47	99·6	2,674	91·0	17·1	18·9	117	0·4
Norfolk	4·47	86·1	2,135	84·4	20·2	23·1	116	1·9
Leeds	4·45	140·3	1,884	81·7	18·1	21·0	103	3·8
Ontario	4·45	109·5	1,930	86·1	17·2	19·8	97	1·0
Cochrane	4·44	155·8	810	1·2	29·0	34·0	187	42·2
Perth	4·40	98·3	2,051	96·9	16·9	20·2	96	0·9
Northumberland	4·40	109·4	1,795	90·0	17·2	20·8	98	2·1
Oxford	4·39	93·0	2,337	95·9	18·3	21·1	97	0·6
Lanark	4·39	200·1	1,834	75·0	19·7	21·7	93	2·6
Lennox	4·34	114·2	1,573	96·4	17·2	20·2	97	1·1
Wellington	4·33	116·7	2,026	96·1	18·0	20·9	101	1·2
Haldimand	4·30	98·1	1,636	92·1	18·0	20·1	97	1·5
Durham	4·24	112·5	1,614	90·3	17·0	19·9	100	0·5
Victoria	4·23	170·4	1,653	63·0	16·6	20·1	91	1·1
Bruce	4·23	128·7	1,606	75·8	19·4	22·4	90	1·3
Thunder Bay	4·21	139·2	1,078	0·9	21·4	26·4	135	6·4
Grey	4·16	125·4	1,593	94·2	18·4	21·3	93	0·4
Elgin	4·15	94·5	1,687	92·9	15·1	18·2	97	2·5
Rainy River	4·15	179·4	745	6·7	20·7	25·7	117	7·7
Dufferin	4·09	132·4	1,884	98·2	17·5	19·9	92	0·3
Huron	4·09	108·3	1,767	96·3	16·3	19·4	97	3·0
Middlesex	4·05	95·0	1,494	95·9	15·6	18·3	103	0·9
Lambton	4·03	103·7	1,441	91·6	17·2	20·5	97	2·6
Grenville	4·02	117·8	1,401	88·1	16·8	19·0	92	5·0
Kenora	3·74	179·0	804	1·5	21·9	25·4	133	6·2

[1]Exclusive of towns of 5,000 and over.

In the second column of Statement CXXXIX the size of the farm household is given as predicted from the standardized birth rate for each county. The calculated sizes were obtained by fitting a third degree curve to the data relating average size of farm household to standardized birth rate for the 55 counties in the province. The equation of the curve was $Y = 3·843 + 0·0798\,X - 0·00465\,X^2 + 0·0001\,X^3$. By comparing the actual averages and predicted

CXXXIX.—AVERAGE SIZE OF FARM HOUSEHOLD AND RELEVANT DATA, NORTHERN ONTARIO, BY COUNTIES, 1930-1931

County	Persons per Farm Household, 1931			Rural Population, 1931		P.C. Increase in Occupied Farms, 1921-31
	Actual (1)	Calculated (2)	Difference (col. 1—col. 2) (3)	As P.C. of 1921 (4)	P.C. of French Racial Origin (5)	(6)
Nipissing	5·89	6·03	−0·14	116	58·8	2·2
Sudbury	5·62	5·23	0·39	116	47·7	− 5·5
Timiskaming	4·67	4·79	−0·12	173	20·9	35·3 [1]
Algoma	4·54	4·87	−0·33	97	13·6	−17·9
Cochrane	4·44	5·23	−0·79	187	42·2	35·3 [1]
Thunder Bay	4·21	4·60	−0·39	135	6·4	26·8
Rainy River	4·15	4·57	−0·42	117	7·7	4·9
Kenora	3·74	4·56	−0·82	133	6·2	24·1

[1] Joint increase. Timiskaming and Cochrane counties.

averages and obtaining their differences we can tell whether a county has a larger or smaller average farm household than can be attributed to the fertility of its inhabitants. The disadvantages of the method will be briefly mentioned. First, the curve does not fit the data well at the ends of the distribution so that we find unduly large residues when dealing with the largest and smallest averages. Secondly, the standardized birth rate applies not to the farm population of each county but to the population exclusive of towns with a population of 5,000 and over. Since the birth rate may be somewhat lower in the small towns than on the farms, a county with a number of small towns would have a lower birth rate on this account. It is possible, however, that the differences in the crude birth rate of the farm population and the rural-non-farm and urban-under-5,000 population of each county result from the less favourable age distribution of the latter population to a high birth rate rather than from actual differential fertility. Obviously, the use of a birth rate standardized for age eliminates this difficulty.

It is apparent from Statement CXXXIX that the small average household size in Cochrane, Thunder Bay, Rainy River and Kenora counties is not a result of a low birth rate. These counties resemble Abitibi county in Quebec where, despite the fact that the birth rate was amazingly high the average farm household was small. All experienced large increases in rural population during the decade 1921-31. That the increases were not entirely due to development of the mining and lumbering industries is evident from the fact that there was a considerable percentage increase in the number of occupied farms. The farm population of these counties must have increased largely by immigration which would produce a large proportion of incompleted families and farms operated by unmarried men. The average farm household will undoubtedly increase in size during the next twenty years as families become completed since the birth rate is high, responsive to the possibilities for population growth. This prediction is confirmed by the fact that it is already large in Nipissing, Sudbury and Timiskaming, counties which have reached a more advanced stage of settlement. The moderate increase in rural population in these counties during the decade 1921-31 was probably the result of the absorption of natural increase rather than of an influx from outside the county, the present colonization resembling that taking place in the growing counties of Eastern Quebec.

In studying the colonization of Northern Ontario and Northern Quebec we have had an opportunity of observing the effects of settlement on average household size. During the first ten or twenty years of the history of a newly settled community the average size of the farm household is small due to the presence of a large proportion of incompleted families and unmarried farm operators. During the following ten or twenty years the young heads of families reach middle age and their small families grow to large ones, as the rate of reproduction is high for pioneers, so that the average size of the farm household, initially quite small, becomes quite large. After a peak has been reached, the average slowly commences to decrease since the middle-aged heads become old heads, their families breaking up to move to new farms or to emigrate.

This process has been going on in the component parts of Canada ever since the first French settlers arrived. Consequently, the average size of the household has continuously fluctuated in sympathy. Since at no time has the entire nation or even a considerable section passed through precisely the same stage, the effects of settlement on average household size from decade to decade are difficult to trace, but it must always be remembered that they will have a distinct bearing on the average size of the household at any period.

Economic Factors Affecting Average Household Size.—In Statement CXXXVII a negative correlation was observed between birth rate and value of produce per farm. Farmers in the more prosperous counties of Ontario evidently tend to have smaller biological families. The birth rate is relatively high in such counties as Nipissing, Subdury, Haliburton, Parry Sound, Timiskaming, Algoma and Cochrane where the value of farm produce is small. There are other factors which might, however, account for the high birth rate in these counties, *viz.*, the large French-Canadian element and the low density of population.

CXL.—AVERAGE SIZE OF FARM HOUSEHOLD AS COMPARED WITH SIZE PREDICTED FROM BIRTH RATE AND HIRED LABOUR PER FARM, ONTARIO, BY COUNTIES, 1931 AND 1921

County	Persons per Farm Household, 1931			Number of Hired Workers per Occupied Farm, 1930		Number of Occupied Farms		
	Actual (1)	Calculated (2)	Difference (col. 1—col. 2) (3)	Permanent (4)	Temporary (5)	1931 (6)	1921 (7)	Increase, 1921-31 (8)
Nipissing	5·89	6·03	−0·14	0·03	0·31	2,001	1,937	64
Russell	5·63	5·42	0·21	0·07	0·52	2,282	2,459	−177
Sudbury	5·62	5·23	0·39	0·06	0·45	2,148	2,267	−119
Prescott	5·54	4·96	0·58	0·09	0·69	2,532	2,632	−100
Renfrew	5·30	4·63	0·67	0·07	0·41	4,481	4,794	−313
Waterloo	5·21	4·46	0·75	0·28	0·57	3,114	3,356	−242
Glengarry	5·02	4·66	0·36	0·11	0·58	2,434	2,542	−108
Essex	4·88	4·48	0·40	0·11	0·77	5,568	5,459	109
Parry Sound	4·78	4·79	−0·01	0·02	0·38	2,305	2,622	−317
Carleton	4·77	4·43	0·34	0·26	0·57	4,363	4,333	30
Hastings	4·75	4·67	0·08	0·12	0·41	4,840	5,597	−757
Stormont	4·69	4·53	0·16	0·09	0·63	2,294	2,477	−183
Haliburton	4·68	4·87	−0·19	0·01	0·32	853	1,031	−178
Timiskaming	4·67	4·79	−0·12	0·04	0·40	1,943	3,275[1]	–
Manitoulin	4·67	4·62	0·05	0·03	0·47	1,274	1,394	−120
York	4·63	4·38	0·25	0·27	0·62	5,908	5,664	244
Frontenac	4·63	4·47	0·16	0·16	0·47	2,887	3,192	305
Muskoka	4·60	4·46	0·14	0·05	0·36	1,661	1,940	279
Prince Edward	4·57	4·44	0·13	0·18	0·78	2,126	2,608	−482
Peterborough	4·56	4·46	0·10	0·14	0·49	2,717	3,082	−365
Lincoln	4·56	4·36	0·18	0·21	0·13	3,152	3,184	− 32
Algoma	4·54	4·87	−0·33	0·03	0·54	2,056	2,424	−368
Wentworth	4·52	4·34	0·18	0·21	0·98	3,444	3,613	−169
Dundas	4·52	4·42	0·10	0·14	0·65	2,350	2,511	−161
Welland	4·52	4·40	0·12	0·12	0·61	2,572	2,846	−274
Kent	4·51	4·46	0·05	0·12	1·00	6,540	6,881	−341
Simcoe	4·49	4·42	0·07	0·13	0·57	7,591	7,914	−323
Halton	4·49	4·36	0·13	0·27	0·75	2,344	2,231	113
Brant	4·49	4·38	0·11	0·18	0·68	2,794	3,093	−299
Addington	4·49	4·68	−0·19	0·08	0·46	1,068	1,202	−134
Peel	4·47	4·39	0·08	0·41	0·77	2,743	2,753	− 10
Norfolk	4·47	4·48	−0·01	0·18	1·18	3,976	4,215	−239
Leeds	4·45	4·42	0·03	0·17	0·53	3,354	3,507	−153
Ontario	4·45	4·40	0·05	0·20	0·56	4,290	4,196	94
Cochrane	4·44	5·23	−0·79	0·04	0·35	2,489	–	–
Perth	4·40	4·41	−0·01	0·12	0·50	5,299	5,274	25
Northumberland	4·40	4·42	−0·02	0·16	0·83	3,865	4,136	−271
Oxford	4·39	4·43	−0·04	0·22	0·54	5,051	4,795	256
Lanark	4·39	4·44	−0·05	0·10	0·57	2,729	2,896	−167
Lennox	4·34	4·41	−0·07	0·14	0·54	1,605	1,722	−117
Wellington	4·33	4·42	−0·09	0·14	0·41	5,370	5,433	− 63
Haldimand	4·30	4·40	−0·10	0·12	0·49	2,932	3,035	−103
Durham	4·24	4·40	−0·16	0·20	0·56	3,230	3,130	100
Victoria	4·23	4·40	−0·17	0·12	0·43	3,191	3,389	−198
Bruce	4·23	4·46	−0·23	0·08	0·44	6,221	6,442	−221
Thunder Bay	4·21	4·60	−0·39	0·04	0·50	2,173	1,590	583
Grey	4·16	4·43	−0·27	0·07	0·40	8,212	8,427	−215
Elgin	4·15	4·38	−0·23	0·13	0·54	4,529	4,721	−192
Rainy River	4·15	4·57	−0·42	0·02	0·29	1,728	1,644	84
Dufferin	4·09	4·40	−0·31	0·13	0·46	2,645	2,649	− 4
Huron	4·09	4·39	−0·30	0·08	0·65	7,367	7,646	−279
Middlesex	4·05	4·38	−0·33	0·10	0·51	8,017	8,146	−129
Lambton	4·03	4·41	−0·38	0·06	0·42	6,351	6,775	−424
Grenville	4·02	4·39	−0·37	0·11	0·49	2,218	2,225	− 37
Kenora	3·74	4·66	−0·82	0·04	0·30	945	717	228

[1]Inclusive of territory forming Timiskaming and Cochrane counties in 1931.

In Statement CXXXIX the actual average persons per household is compared with the average which would be expected from the birth rate. It will be seen that in all of the above counties with the exception of Sudbury the actual average is less than the calculated. In Cochrane and Timiskaming counties this may be attributed to colonization and the entrance of small new families. In Parry Sound, Haliburton and Algoma, where rural population and occupied farms decreased during the period 1921-31, it appears that the large families are not

holding together, children are leaving home and the population is ageing. By comparing household size, standardized birth rate, percentage of land occupied and increase in rural population, 1921-31, in all the counties of Eastern Canada, the conclusion is reached that the birth rate is high in any county where the density of population is low but that the natural increase is retained only in those districts where the unoccupied land is suitable for colonization. Nipissing and Sudbury counties in Ontario and Chicoutimi, Rimouski, Saguenay, Temiscouata, Lac-St-Jean and Montmorency counties in Quebec appear to be absorbing the greater part of a large natural increase while Parry Sound and Haliburton counties in Ontario with large natural increases are actually decreasing in rural population. Although inhabited by prolific people, counties, such as Digby, Richmond and Guysborough in Nova Scotia, experienced considerable decreases in rural population during the period 1921-31 (see Statement CXXXIV). The unoccupied land in these counties is sub-marginal and the excess population finds a ready outlet in emigration. At the same time, the continued emigration reduces the rate of natural increase due to its effect on the age distribution of the population.

Considering some of the best farming counties in Ontario, Waterloo, Essex, Carleton, York, Wentworth, Dundas, Halton and Peel, where the value of farm produce per farm in 1930 approximated $2,000, it is found that the actual average persons per farm is invariably larger than the calculated. Although the biological families in these counties may be small they do not break up as quickly as the larger families on the marginal farms. The size of the household is also augmented by the presence of permanent hired labourers. Since the above counties are close to large industrial centres, it appears that the movement from farm to city is not as large from the counties immediately surrounding the cities as from the more remote counties. Evidently, "far away hills look green" to the boy or girl raised on a farm in an outlying district.

CXLI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF THE 55 COUNTIES IN ONTARIO ACCORDING TO INTERVALS OF DIFFERENCE BETWEEN ACTUAL AND CALCULATED AVERAGE SIZE OF FARM HOUSEHOLD, 1931, IN RELATION TO VALUE OF FARM PRODUCE PER FARM, 1930

Difference between Actual and Calculated Persons per Farm Household, 1931	Counties — Value of Farm Produce per Farm, 1930										
	$ 700 and less than 900	$ 900 and less than 1,100	$ 1,100 and less than 1,300	$ 1,300 and less than 1,500	$ 1,500 and less than 1,700	$ 1,700 and less than 1,900	$ 1,900 and less than 2,100	$ 2,100 and less than 2,300	$ 2,300 and less than 2,500	$ 2,500 and less than 2,700	Total
−0·90 and less than −0·80	1										1
−0·80 " " " −0·70	1										1
−0·70 " " " −0·60											
−0·60 " " " −0·50											
−0·50 " " " −0·40	1										1
−0·40 " " " −0·30		1	1	3		1					6
−0·30 " " " −0·20					3	1					4
−0·20 " " " −0·10		2	1	1	2						6
−0·10 " " " 0·00			1		2	2	2	1	1		9
0·00 " " " 0·10				1	2	2	1			1	7
0·10 " " " 0·20		1		1	1	4	4				11
0·20 " " " 0·30					1		1				2
0·30 " " " 0·40		1				1	1				3
0·40 " " " 0·50							1				1
0·50 " " " 0·60					1						1
0·60 " " " 0·70					1						1
0·70 " " " 0·80									1		1
Total.....	3	5	3	6	13	11	10	1	2	1	55
Mean of differences	−0·68	−0·03	−0·18	−0·17	−0·04	0·03	0·16	−0·05	0·35	0·05	

That the differences between the actual average number of persons per household and the average predicted from the birth rate is dependent to some extent on the productivity of the county's farms is clear from the above scatter diagram. The counties where the value of farm produce per farm is low are either those which have been recently colonized or long-settled counties from which there has been a large emigration. The more prosperous counties have been able to absorb a larger portion of their natural increase. While families are biologically larger in the less productive counties, economic factors tend to keep the family together longer in the more productive counties.

THE PRAIRIE PROVINCES

The average sizes of farm households in each of the Prairie Provinces in 1931 were as follows:—

Manitoba	5·09
Saskatchewan	4·70
Alberta	4·26

The average household was larger in Manitoba than for Canada as a whole (4·90) but smaller in Saskatchewan and Alberta. Referring to Statement CXXI, page 132, the smallest average household for any of the Manitoba census divisions was 4·6 persons while 10 of the 18 Saskatchewan census divisions and 14 of the 17 Alberta census divisions had average households smaller than 4·6. The dispersion in the averages for the Manitoba and Saskatchewan census divisions was relatively small but larger for the Alberta census divisions. The large size of the average farm household in Manitoba is due to the fact that it has reached a more mature stage of settlement than Saskatchewan and Alberta. For example, the latter provinces had a higher proportion of 1-person households than Manitoba.

CXLII.—ONE-PERSON HOUSEHOLDS, PRAIRIE PROVINCES, 1931

Province	Farm Population	Farm Households	P.C. of Rural Households of 1 Person	Estimated No. 1-Person Farm Households		
				Assuming Same P.C. Farm as Rural (col. 3 × col. 2)	Applying Manitoba Percentage	Difference (col. 4 − col. 5)
	(1)	(2)	(3)	(4)	(5)	(6)
Manitoba	256,305	50,326	7·56	3,805	3,805	-
Saskatchewan	564,012	120,110	11·85	14,235	9,080	5,155
Alberta	375,097	88,119	16·36	14,418	6,662	7,756

In column 3 of Statement CXLII the percentages of rural households consisting of 1 person have been given for each of the Prairie Provinces. An estimate of the number of 1-person farm households in each province has been made by applying these percentages to the number of farm households. This method, of course, involves the assumption that the same percentages apply to both the farm and non-farm rural populations of each province. In column 5 the Manitoba percentage of 1-person households has been applied to the number of farm households in Alberta

CXLIII.—AVERAGE SIZE OF FARM HOUSEHOLD AS ADJUSTED FOR DISPROPORTIONATE NUMBERS OF ONE-PERSON HOUSEHOLDS, PRAIRIE PROVINCES, 1931

Province	Average Persons per Farm Household		Difference between Averages and Manitoba Averages		Differences in Adjusted as P.C. of Differences in Actual
	Actual	Adjusted for Excessive Proportion of 1-Person Households	Actual	Adjusted	
	(1)	(2)	(3)	(4)	(5)
Manitoba	5·09	5·09	-	-	-
Saskatchewan	4·70	4·86	−0·39	−0·23	59
Alberta	4·26	4·57	−0·83	−0·52	63

and Saskatchewan in order to obtain the number of farm households in these provinces which would consist of 1 person if the ratios of 1-person households to all households were the same as for Manitoba. The differences of the numbers appearing in column 4 and column 5 give the excess numbers of 1-person households in Saskatchewan and Alberta.

In Statement CXLIII the differences in the average sizes of farm households before and after allowing for the disproportionate numbers of 1-person households in Saskatchewan and Alberta have been compared. In the case of the difference between average household size in Saskatchewan and Manitoba the difference in the adjusted averages was only 59 p.c. of the difference in the actual averages, so that 41 p.c. of the difference in the actual averages was due to the greater proportion of 1-person households in Saskatchewan. Similarly, 37 p.c. of the difference in the average size of farm household in Alberta and Manitoba resulted from the higher proportion of 1-person households in Alberta. One-person households are common to newly settled districts, the homesteader often living alone. As well as the 1-person households in the outlying districts of Alberta and Saskatchewan there are, probably, many pioneer farms operated by 2 or 3 partners living together or recently married couples who have no children. That the large size of the household in Manitoba was not due to the fertility of its population may be seen by comparing the unweighted means of the standardized birth rates for each census division exclusive of towns with population 5,000 and over.

Manitoba	25·9
Saskatchewan	28·0
Alberta	29·8

The birth rate is actually considerably higher in Alberta than it is in Manitoba.

Population Movement in the Prairie Provinces, 1921-1931.—It is apparent from Statement CXLIV that rural Manitoba absorbed only a very small portion of its natural increase during the ten-year period 1921-31 since the increase per 1,000 in rural population scarcely exceeded the increase due to immigration. It would appear, then, that there was a considerable emigration from the farms of Manitoba during the decade. This exodus did not act to reduce household size as it did in the Maritime Provinces and in certain counties of Southern Ontario as it had been going on for a shorter period of time. It was not a large exodus and consisted in all probability of persons leaving the home farm at an age when they would normally leave under any conditions. The fact that they moved to Winnipeg or outside the province instead of to a new farm tended to raise the average size of the farm household since there were fewer small new families. However, the process will inevitably result in a decrease in the average size of farm household since, while it produces a high proportion of large families, it leaves a low proportion of potentially large families. In fact it will be seen later that the average size of the farm household in Manitoba commenced to decrease during the period 1931-36.

CXLIV.—INCREASE PER 1,000 IN RURAL POPULATION, OCCUPIED FARMS AND IMMIGRATION, PRAIRIE PROVINCES, 1921-1931

Province	Increase per 1,000 in 1921-31 in		Rural Foreign Born Arriving in Decade per 1,000 1921 Population
	Rural Population	Occupied Farms	
Manitoba	100	20	90
Saskatchewan	170	140	110
Alberta	240	170	180

Saskatchewan and Alberta had larger proportionate increases in rural population during the period 1921-31 and also a larger immigration than Manitoba. It would appear from Statement CXLIV that their rural populations absorbed a larger natural increase than that of Manitoba, due to the possibilities either that the natural increase was larger than in Manitoba or that a larger portion of the natural increase remained in the rural parts of the provinces. While the increase in occupied farms in Manitoba was small, there was a marked increase in Saskatchewan

and Alberta indicating that settlement was still taking place in these provinces. The percentages of farm operators in the three provinces who had been on their farms less than five years were as follows:—

Manitoba	32·7
Saskatchewan	35·1
Alberta	40·4

The majority of these operators must have had small families; many, as already pointed out, had no families at all. Colonization in Saskatchewan and Alberta has had the effect of reducing the average size of the farm household.

Average Size of Farm Household by Census Divisions.—Of Manitoba farm operators, 26·2 p.c. were born in Manitoba as compared with 7·7 p.c. of Saskatchewan farm operators and 6·8 p.c. of Alberta farm operators born in their respective provinces of residence. The farm population of Manitoba is, consequently, a much more indigenous population than that of the two latter provinces. Moreover, it is probable that a high proportion of the Manitoba farm operators born outside the province have been in the province for a long period. Fertility will be a much more important factor in determining average household size in Manitoba than in Saskatchewan and Alberta.

CXLV.—AVERAGE PERSONS PER FARM HOUSEHOLD, 1931, RURAL POPULATION, NUMBER OF OCCUPIED FARMS AND STANDARDIZED BIRTH RATE, PRAIRIE PROVINCES, BY CENSUS DIVISIONS, 1931 AND 1921

Census Division	Persons per Farm Household, 1931	Rural Population			Occupied Farms			Standardized Birth Rate, 1930-32
		1931	1921	1931 as P.C. of 1921	1931	1921	1931 as P.C. of 1921	
Manitoba	5·09	384,170	348,502	110	54,199	53,252	102	-
Division No. 1	5·53	22,817	20,009	114	3,328	3,172	105	39·7
Division No. 2	5·83	33,646	32,642	103	5,247	4,597	114	31·9
Division No. 3	4·91	24,576	22,070	111	4,153	3,713	112	23·8
Division No. 4	4·64	15,054	14,180	106	2,931	2,810	104	20·6
Division No. 5	5·31	38,898	28,390	137	4,152	3,472	120	24·9
Division No. 6	5·44	37,088	27,757	134	4,018	3,561	113	24·0
Division No. 7	4·61	18,582	19,251	97	3,314	3,118	106	19·5
Division No. 8	4·79	14,855	14,701	101	2,568	2,656	97	19·9
Division No. 9	4·83	38,889	34,476	113	2,769	2,533	109	18·7
Division No. 10	4·82	15,387	17,083	90	2,787	3,162	88	24·7
Division No. 11	4·92	23,782	22,864	104	4,289	4,070	105	23·4
Division No. 12	5·22	23,631	27,133	87	3,896	5,316	73	31·6
Division No. 13	5·10	18,977	21,306	89	3,446	4,103	84	26·9
Division No. 14	4·93	22,309	20,143	111	4,373	3,959	110	27·0
Division No. 15	4·81	9,040	7,953	114	1,476	1,438	103	27·9
Division No. 16	4·80	26,639	18,544	144	1,461	1,572	93	30·1
Saskatchewan	4·70	630,880	538,552	117	136,472	119,451	114	-
Division No. 1	4·78	31,096	26,851	116	6,461	5,679	114	24·2
Division No. 2	4·58	31,561	27,796	114	7,597	6,458	118	26·3
Division No. 3	4·55	37,936	32,671	116	8,939	8,547	105	26·9
Division No. 4	4·04	22,178	19,313	115	6,347	5,783	110	25·0
Division No. 5	5·05	38,418	36,582	105	8,040	7,238	111	25·7
Division No. 6	5·03	44,358	42,227	105	8,878	7,497	118	23·0
Division No. 7	4·59	35,441	35,559	97	8,556	8,939	96	25·7
Division No. 8	4·57	36,705	36,592	100	8,900	9,233	96	27·4
Division No. 9	5·29	47,454	44,561	106	9,070	8,168	111	28·6
Division No. 10	4·97	35,530	30,292	117	7,458	6,589	113	29·9
Division No. 11	4·90	34,101	32,599	105	7,440	7,397	101	23·5
Division No. 12	4·44	30,974	28,077	110	7,290	6,690	109	23·8
Division No. 13	4·67	33,237	28,583	116	7,416	6,738	110	29·2
Division No. 14	4·12	40,409	20,863	194	8,882	5,095	174	31·7
Division No. 15	5·17	63,643	49,626	128	11,890	10,011	119	33·3
Division No. 16	4·34	37,966	26,260	145	8,137	5,496	148	31·2
Division No. 17	4·15	23,534	15,655	150	4,946	3,886	127	31·9
Division No. 18	4·39	6,339	4,445	143	225	7	3,214	36·2
Alberta	4·26	453,097	365,550	124	97,408	82,954	117	-
Division No. 1	4·27	15,909	17,663	90	3,709	4,411	84	30·9
Division No. 2	5·02	29,383	22,112	133	4,918	4,138	119	26·9
Division No. 3	4·19	11,804	13,915	85	2,754	3,921	70	26·4
Division No. 4	4·48	21,666	18,447	117	4,648	4,536	102	22·3
Division No. 5	3·82	23,065	27,496	84	5,975	8,102	74	23·7
Division No. 6	4·44	46,436	40,735	114	8,028	6,994	115	23·5
Division No. 7	4·25	30,556	30,262	101	7,740	7,749	100	26·4
Division No. 8	4·36	45,250	40,457	112	10,229	8,899	115	23·3
Division No. 9	3·98	22,184	16,085	138	4,239	3,444	123	22·2
Division No. 10	4·90	50,113	39,498	127	10,620	8,200	130	30·0
Division No. 11	4·65	41,641	31,407	133	8,690	6,331	137	30·7
Division No. 12	3·38	11,920	7,393	161	2,243	1,971	114	30·1
Division No. 13	4·41	23,368	15,419	152	4,711	3,366	140	40·4
Division No. 14	4·10	36,962	24,006	154	8,736	6,342	138	36·2
Division No. 15	3·18	12,286	5,003	246	2,880	937	307	36·8
Division No. 16	3·21	24,766	10,730	231	6,977	3,578	195	31·6
Division No. 17	3·85	5,788	4,922	118	311	35	889	45·4

Average household size and standardized birth rate as given in Statement XXXVIII are cross-classified in three scatter diagrams, one for each province, appearing below.

CXLVI.—SCATTER DIAGRAMS SHOWING FREQUENCY DISTRIBUTION OF THE CENSUS DIVISIONS OF THE PRAIRIE PROVINCES ACCORDING TO INTERVALS OF AVERAGE SIZE OF FARM HOUSEHOLD, 1931, IN RELATION TO STANDARDIZED BIRTH RATE, 1930-1932

Average Persons per Farm Household, 1931	Census Divisions — Standardized Birth Rate[1] per 1,000 Population, 1930-32														
	18 and less than 20	20 and less than 22	22 and less than 24	24 and less than 26	26 and less than 28	28 and less than 30	30 and less than 32	32 and less than 34	34 and less than 36	36 and less than 38	38 and less than 40	40 and less than 42	42 and less than 44	44 and less than 46	Total
(A) MANITOBA															
4·6 and less than 4·8	2	1													3
4·8 " " " 5·0	1		2	1	2		1								7
5·0 " " " 5·2					1										1
5·2 " " " 5·4				1			1								2
5·4 " " " 5·6				1							1				2
5·6 " " " 5·8															
5·8 " " " 6·0							1								1
(B) SASKATCHEWAN															
4·0 and less than 4·2				1			2								3
4·2 " " " 4·4							1			1					2
4·4 " " " 4·6			1	1	3										5
4·6 " " " 4·8				1		1									2
4·8 " " " 5·0			1			1									2
5·0 " " " 5·2			1		1			1							3
5·2 " " " 5·4						1									1
(C) ALBERTA															
3·0 and less than 3·2										1					1
3·2 " " " 3·4							2								2
3·4 " " " 3·6															
3·6 " " " 3·8															
3·8 " " " 4·0			2											1	3
4·0 " " " 4·2					1					1					2
4·2 " " " 4·4			1		1		1								3
4·4 " " " 4·6			2									1			3
4·6 " " " 4·8							1								1
4·8 " " " 5·0							1								1
5·0 " " " 5·2					1										1
Total.....	3	1	10	6	10	3	11	1		3	1	1		1	51
Means of averages..	4·8	4·7	4·5	4·8	4·7	5·0	4·5	5·1		3·8	5·5	4·5		3·9	

[1]Exclusive of towns of 5,000 and over.

If the means of the average sizes of farm households for the census divisions in each birth-rate group given at the bottom of the above scatter diagrams are observed, it will be evident that there is no general trend relating average size of farm household to birth rate for the census divisions of the Prairie Provinces. From inspection of the individual diagrams for each province, however, a definite positive correlation between household size and birth rate will be seen in Manitoba while no correlations can be detected in Saskatchewan and Alberta. In Manitoba

where the population is relatively indigenous, average size of farm household reflects the fertility of the different racial stocks in each census division while in Saskatchewan and Alberta population movements are more potent in determining the averages than fertility.

Population Movements, 1931-1936. — Data are available for the farm population of the three Prairie Provinces from the 1936 Quinquennial Census enabling us to study population movements during the period and their bearing on average size of farm household.

CXLVII.—ACTUAL INCREASE AND ESTIMATED NATURAL INCREASE IN FARM POPULATION AND INCREASE IN NUMBER OF OCCUPIED FARMS, PRAIRIE PROVINCES, 1931-1936

Province	Farm Population				Occupied Farms		
	1936	1931	Actual Increase	Estimated Natural Increase	1936	1931	Increase
Manitoba	261,167	256,305	4,862	14,706	57,774	54,199	3,575
Saskatchewan	573,894	564,012	9,882	42,943	142,391	136,472	5,919
Alberta	400,403	375,097	25,306	27,864	100,358	97,408	2,950

The estimate of the natural increase of the farm population of each province was made on the basis that the same rate of increase applied to the farm population as to the population of the province as a whole. Since the high birth rate for the farm population naturally results in a higher rate of natural increase than for the urban population, the natural increase will be underestimated, particularly in Manitoba where the provincial rate is lowered by the city of Winnipeg. It will be abundantly clear, however, that the farm populations of Manitoba and Saskatchewan during the five-year period were unable to absorb their natural increase. The exodus from the farms of Manitoba and Saskatchewan far exceeded immigration. Alberta made a much better showing since the actual increase in population nearly equalled the natural increase.

CXLVIII.—IMMIGRANTS REPORTING FARMING AS INTENDED OCCUPATION, BY AGE AND SEX, PRAIRIE PROVINCES, 1931-1935

Province	Immigrants Reporting Farming as Intended Occupation					
	Total	Per 1,000 1931 Population	18 Years and over		Under 18	
			Males	Females	Males	Females
Manitoba	1,098	4·3	425	249	208	216
Saskatchewan	1,224	2·2	598	262	245	119
Alberta	2,290	6·1	1,088	490	395	317

Immigration into the three Prairie Provinces accounted for little increase in population during the period 1931-35. It is significant that the total number of female immigrants and males under 18 exceeded for each province the number of male immigrants 18 years of age and over. Immigration during the period was, consequently, largely a matter of families uniting with previously established heads.

CXLIX.—MOVEMENT OF POPULATION BETWEEN FARM AND CITY, PRAIRIE PROVINCES, 1931-1936

Province	Both Sexes				Males			Females		
	Going to Farm	Leaving Farm	Difference	Difference per 1,000 1931 Population	Going to Farm	Leaving Farm	Difference	Going to Farm	Leaving Farm	Difference
Manitoba	3,077	7,356	−4,279	−16·5	1,599	3,041	−1,442	1,478	4,315	−2,837
Saskatchewan	4,824	11,260	−6,436	−11·3	2,452	4,674	−2,222	2,372	6,586	−4,214
Alberta	4,660	8,104	−3,444	−8·9	2,457	3,578	−1,121	2,203	4,526	−2,323

Questions were inserted on the farm sehedules of the 1936 Census asking for the numbers of persons of eaeh sex who left the farm during the five-year period prior to June 1, 1936, to make their permanent residenee in a eity, town or village and the number of persons of eaeh sex who left a eity, town or village to make their permanent residence on the farm. The returns unfortunately do not eompletely eover the rural-urban movement sinee no data are available on the movement from vacant and abandoned farms. It is evident, however, that the movement from the farms eonsiderably exceeded that to the farms. The number of males going to farms in eaeh province slightly exeeeded the number of females while the number of femalcs leaving the farm eonsiderably exeeeded the number of males. This probably refleets the movement of young women to the city to seek employment there.

CL.—AVERAGE SIZE OF FARM HOUSEHOLD AND PERCENTAGE INCREASES IN FARM POPULATION AND NUMBER OF OCCUPIED FARMS, PRAIRIE PROVINCES, 1931 AND 1936

Province	Persons per Farm Household			Percentage Increase	
	1936	1931	Difference	Farm Population	Occupied Farms
Manitoba	4·96	5·09	−0·13	1·88	6·60
Saskatchewan	4·69	4·70	−0·01	1·74	4·34
Alberta	4·42	4·26	0·16	6·52	3·03

The average size of the farm household deereased during the five-ycar inter-eensal period in Manitoba, remained praetieally eonstant in Saskatehewan, and increased in Alberta. It was pointed out on page 158 that, sinee the population of Manitoba had reaehed a settled stage, the average size of the farm household was probably elose to a peak in 1931 and would eommenee to deerease due to eontinued emigration from the farms and the ageing of family heads. Evidently, the decrease materialized during the period 1931-36. That it was universal throughout the provinee is evident from the fact that the average household decreascd in size in fourteen of the sixteen census divisions. Aeeording to Statement CLI, the only divisions where the averagc size of the farm household inereased were No. 2 and No. 16. The latter is in thc extreme north and thc average size of farm household is evidently inereasing as the population maturcs. In Saskatehewan the average size of the farm household inereased in eight census divisions and deercased in ten. The largest deerease was in Division No. 18 wherc there was a great deal of eolonization during the period as indicated by an inerease of 84 p.e. in the number of oeeupied farms. In Alberta the averagc inereased in fifteen eensus divisions and deereased in only two. Thc largest inercases were in Divisions No. 15 and No. 16 where the average households in 1931 were extremely small. The number of oeeupied farms in these divisions deereased while the population inereased. There was evidently little new settlement during the five-year period and the families already therc inereased in size. On the other hand, in Division No. 17 where there was an increasc of 70·42 p.e. in oeeupied farms the average household increased in size by only 0·03 persons.

CLI.—PERSONS PER FARM HOUSEHOLD, FARM POPULATION AND NUMBER OF OCCUPIED FARMS, PRAIRIE PROVINCES, 1931 AND 1936

Census Division	Persons per Farm Household			Farm Population				Occupied Farms			
						Increase				Increase	
	1936	1931	Increase	1936	1931	Absolute	P.C.	1936	1931	Absolute	P.C.
Manitoba	4·96	5·09	−0·13	261,167	256,305	4,862	1·90	57,774	54,199	3,575	6·60
Division No. 1	5·41	6·53	−0·13	19,751	17,944	1,807	10·07	3,869	3,328	541	16·26
Division No. 2	5·88	5·83	0·05	27,201	27,261	−60	−0·22	5,274	5,247	27	0·51
Division No. 3	4·79	4·91	−0·12	17,584	18,534	−950	−5·13	4,086	4,153	−67	−1·61
Division No. 4	4·31	4·64	−0·33	10,569	12,606	−2,037	−16·16	2,745	2,931	−186	−6·35
Division No. 5	4·93	5·31	−0·38	22,381	21,626	755	3·49	4,827	4,152	675	16·26
Division No. 6	5·29	5·44	−0·15	21,320	19,632	1,688	8·60	4,693	4,018	575	14·31
Division No. 7	4·48	4·64	−0·16	13,663	14,004	−341	−2·44	3,437	3,314	123	3·71
Division No. 8	4·60	4·79	−0·19	10,734	11,718	−984	−8·40	2,729	2,568	161	6·27
Division No. 9	4·79	4·83	−0·14	13,203	12,924	279	2·16	2,896	2,760	136	4·93
Division No. 10	4·69	4·82	−0·13	12,729	12,063	666	5·52	2,990	2,787	203	7·28
Division No. 11	4·74	4·92	−0·18	18,514	18,845	−331	−1·76	4,384	4,289	95	2·21
Division No. 12	4·96	5·22	−0·26	19,980	19,509	471	2·41	4,204	3,896	308	7·91
Division No. 13	5·02	5·10	−0·08	16,948	16,193	755	4·66	3,589	3,446	143	4·16
Division No. 14	4·88	4·93	−0·05	20,803	19,673	1,130	5·74	4,728	4,373	355	8·12
Division No. 15	4·77	4·81	−0·04	8,322	6,822	1,500	21·99	1,852	1,476	376	25·47
Division No. 16	4·83	4·80	0·03	7,465	6,951	614	7·39	1,571	1,461	110	7·53

CLI.—PERSONS PER FARM HOUSEHOLD, FARM POPULATION AND NUMBER OF OCCUPIED FARMS, PRAIRIE PROVINCES, 1931 AND 1936—Con.

Census Division	Persons per Farm Household			Farm Population				Occupied Farms			
						Increase				Increase	
	1936	1931	Increase	1936	1931	Absolute	P.C.	1936	1931	Absolute	P.C.
Saskatchewan	4·69	4·70	−0·01	573,894	564,012	9,882	1·75	142,391	136,472	5,919	4·34
Division No. 1	4·48	4·78	−0·30	24,993	27,722	−2,729	−9·84	6,651	6,461	190	2·94
Division No. 2	4·55	4·58	−0·03	26,240	29,017	−2,777	−9·57	6,897	7,597	−700	−9·21
Division No. 3	4·57	4·55	0·02	30,846	34,598	−3,752	−10·84	8,101	8,939	−838	−9·37
Division No. 4	4·09	4·04	0·05	18,935	20,858	−1,923	−9·22	5,538	6,347	−809	−12·75
Division No. 5	4·02	5·05	−0·13	35,655	35,920	−265	−0·74	8,295	8,040	255	3·17
Division No. 6	4·88	5·03	−0·15	37,257	38,353	−1,096	−2·86	8,885	8,878	7	0·08
Division No. 7	4·50	4·59	−0·09	28,766	32,859	−4,093	−12·46	7,747	8,556	−809	−9·46
Division No. 8	4·47	4·57	−0·10	31,070	33,619	−2,549	−7·68	8,608	8,900	−292	−3·28
Division No. 9	5·16	5·29	−0·13	46,219	43,881	2,338	5·33	9,970	9,070	900	9·92
Division No. 10	5·01	4·97	0·04	34,822	32,647	2,175	6·66	8,017	7,458	559	7·50
Division No. 11	4·86	4·90	−0·04	28,523	31,691	−3,168	−10·00	7,073	7,440	−367	−4·93
Division No. 12	4·41	4·44	−0·03	27,265	28,085	−820	−2·92	7,294	7,290	4	0·05
Division No. 13	4·73	4·67	0·06	29,283	30,400	−1,117	−3·67	7,522	7,416	106	1·43
Division No. 14	4·41	4·12	0·29	44,762	34,568	10,194	29·49	11,176	8,882	2,294	25·83
Division No. 15	5·20	5·17	0·03	60,753	56,510	4,243	7·51	13,283	11,890	1,393	11·72
Division No. 16	4·56	4·34	0·22	40,560	32,976	7,584	23·00	10,024	8,137	1,887	23·19
Division No. 17	4·23	4·15	0·08	26,357	19,330	7,027	36·35	6,896	4,946	1,950	39·43
Division No. 18	4·01	4·39	−0·38	1,588	978	610	62·37	414	225	189	84·00
Alberta	4·42	4·26	0·16	400,403	375,097	25,306	6·75	200,358	197,408	2,950	3·03
Division No. 1	4·41	4·27	0·14	14,782	13,555	1,227	9·05	3,899	3,709	190	5·12
Division No. 2	4·99	5·02	−0·03	22,082	22,205	−123	−0·55	5,044	4,918	126	2·56
Division No. 3	4·38	4·19	0·19	10,189	10,134	55	0·54	2,575	2,754	−179	−6·50
Division No. 4	4·44	4·48	−0·04	17,289	18,164	−875	−4·82	4,511	4,648	−137	−2·95
Division No. 5	3·87	3·82	0·05	14,806	19,881	−5,075	−25·53	4,317	5,975	−1,658	−27·75
Division No. 6	4·57	4·44	0·13	34,168	32,041	2,127	6·64	8,247	8,028	219	2·73
Division No. 7	4·32	4·25	0·07	28,224	28,407	−183	−0·64	7,575	7,740	−165	−2·13
Division No. 8	4·48	4·36	0·12	43,099	40,327	2,772	6·87	10,712	10,229	483	4·72
Division No. 9	4·06	3·98	0·08	19,905	15,715	4,190	26·66	5,284	4,239	1,045	24·65
Division No. 10	4·93	4·90	0·03	48,922	46,809	2,113	4·51	11,257	10,620	637	6·00
Division No. 11	4·68	4·65	0·03	41,330	37,290	4,040	10·83	9,615	8,690	925	10·64
Division No. 12	3·63	3·38	0·25	9,333	7,127	2,206	30·95	2,703	2,243	460	20·51
Division No. 13	4·64	4·41	0·23	23,995	19,512	4,483	22·98	5,535	4,711	824	17·49
Division No. 14	4·33	4·10	0·23	37,881	33,181	4,700	14·16	9,426	8,736	690	7·90
Division No. 15	3·80	3·18	0·62	9,223	8,669	554	6·39	2,606	2,880	−274	−9·51
Division No. 16	3·85	3·21	0·64	23,194	20,884	2,310	11·06	6,522	6,977	−455	−6·52
Division No. 17	3·88	3·85	0·03	1,981	1,196	785	65·64	530	311	219	70·42

CLII.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF THE 51 CENSUS DIVISIONS IN THE PRAIRIE PROVINCES ACCORDING TO CHANGE IN AVERAGE SIZE OF FARM HOUSEHOLD, 1931-1936, IN RELATION TO AVERAGE SIZE OF FARM HOUSEHOLD, 1931

Increase in Average Size of Farm Household, 1931-36	Census Divisions — Persons per Farm Household, 1931							Mean of Averages
	3·0 and less than 3·5	3·5 and less than 4·0	4·0 and less than 4·5	4·5 and less than 5·0	5·0 and less than 5·5	5·5 and less than 6·0	Total	
−0·4 and less than −0·3			1	1	1		3	4·78
−0·3 " " " −0·2				1	1		2	5·00
−0·2 " " " −0·1				6	4	1	11	5·02
−0·1 " " " 0·0			2	6	2		10	4·74
0·0 " " " 0·1		3	3	6	1	1	14	4·55
0·1 " " " 0·2			4				4	4·32
0·2 " " " 0·3	1		4				5	4·07
0·3 " " " 0·4								
0·4 " " " 0·5								
0·5 " " " 0·6								
0·6 " " " 0·7	2						2	3·20
Total	3	3	14	20	9	2	51	
Mean of differences	0·50	0·05	0·09	−0·08	−0·14	−0·04		

Statement CLII reveals the interesting tendency of the average farm household to decrease in size during the period 1931-36 where it was large in 1931 and to increase where it was small. Apparently, in the Western Provinces the average is fluctuating about a general average in response to various conditions, sometimes being below the typical, after which it commences to increase, and sometimes being above, after which it commences to decrease.

Average Household Size in Drought Areas.—The large percentage decrease in the number of occupied farms in Census Divisions Nos. 2, 3, 4, 7 and 8 in Saskatchewan and 3 and 5 in Alberta represents farms abandoned due to drought conditions.

CLIII.—HOUSEHOLD SIZE IN CENSUS DIVISIONS SUFFERING FROM DROUGHT, 1931 AND 1936

Census Division	Persons per Farm Household			P.C. Increase	
	1936	1931	Difference	Rural Population	Occupied Farms
Saskatchewan—					
Division No. 2	4·55	4·58	−0·03	− 9·57	− 9·21
Division No. 3	4·57	4·55	0·02	−10·84	− 9·37
Division No. 4	4·09	4·04	0·05	− 9·22	−12·75
Division No. 7	4·50	4·59	−0·09	−12·46	− 9·46
Division No. 8	4·47	4·57	−0·10	− 7·58	− 3·28
Alberta—					
Division No. 3	4·38	4·19	0·19	0·54	− 6·50
Division No. 5	3·87	3·82	0·05	−25·53	−27·75

It is significant that in only three of the seven census divisions given above did the average size of the farm household decrease during the period 1931-36. The drought has not broken up families to any marked extent and the movement out of the area has evidently been a movement of families and not of individual members of families.

Household Size and Type of Farming.—The 1936 Census of Agriculture classifies farms according to type on the basis of value of produce in 1935. For example, if over 50 p.c. of the produce of a farm in 1935 was wheat the farm is classed as a wheat farm.

CLIV.—FARM POPULATION, NUMBER OF FARMS REPORTING MALE POPULATION AND PERSONS PER FARM HOUSEHOLD, BY TYPE OF FARM, PRAIRIE PROVINCES, 1936

Type of Farm	Manitoba			Saskatchewan			Alberta		
	Farm Population	Farms Reporting Male Population	Persons per Farm Household	Farm Population	Farms Reporting Male Population	Persons per Farm Household	Farm Population	Farms Reporting Male Population	Persons per Farm Household
Wheat	28,150	5,625	5·0	233,852	50,466	4·6	107,871	24,722	4·4
Other grains	15,277	3,489	4·4	17,921	4,485	4·0	15,259	3,901	3·9
Lorse	831	229	3·6	2,327	650	3·6	2,979	875	3·4
Cattle	4,881	1,130	4·3	7,489	1,782	4·2	11,830	2,795	4·2
Sheep	582	144	4·0	652	144	4·5	1,333	329	4·1
Swine	2,926	528	5·5	4,990	1,044	4·8	31,962	6,755	4·7
Mixed live stock	1,851	383	4·8	1,742	355	4·9	3,409	685	5·0
Animal products	12,706	2,486	5·1	5,514	1,124	4·9	7,067	1,515	4·7
Forest products	1,169	316	3·7	1,321	439	3·0	657	211	3·1
Consuming 50 p.c. of its products	71,028	13,601	5·2	121,989	23,804	5·1	188,432	19,790	4·5
General products	118,242	22,350	5·3	169,615	32,468	5·2	123,567	24,581	5·0
Not reporting	3,524	955	3·7	6,394	2,050	3·1	6,014	2,042	2·9

In Statement CLIV the average size of the farm household is given by type of farm for the three provinces. It will be seen that households are generally larger on farms falling under the following types: swine, mixed, live stock, animal products, products consumed and general products. In Statement CLV the data for the three provinces are combined.

CLV.—AGGREGATE FARM POPULATION, NUMBER OF FARMS REPORTING MALE POPULATION AND AVERAGE PERSONS PER FARM HOUSEHOLD, BY TYPE OF FARM, PRAIRIE PROVINCES, 1936

Type of Farm	Farm Population	Farms Reporting Male Population	Persons per Farm Household
Wheat	369,873	80,813	4·6
Other grains	48,457	11,875	4·1
Horse	6,137	1,754	3·5
Cattle	24,200	5,707	4·2
Sheep	2,567	617	4·2
Swine	39,878	8,327	4·8
Mixed live stock	7,002	1,423	4·9
Animal products	25,287	5,125	4·9
Forest products	3,147	966	3·3
Consuming 50 p.c. of its products	281,449	57,195	4·9
General products	411,424	79,399	5·2
Not reporting	15,932	5,047	3·2

Evidently there are five types of farms which may be termed large-family types. If average size of farm household in each census division is affected by the type of farms therein, we should expect a positive correlation between the average for each division and the percentage of farms of large-family types.

CLVI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF THE 51 CENSUS DIVISIONS IN THE PRAIRIE PROVINCES, 1936, ACCORDING TO AVERAGE SIZE OF FARM HOUSEHOLD IN RELATION TO PERCENTAGES OF FARMS OF LARGE-FAMILY TYPES

Persons per Farm Household	Census Divisions									
	P.C. of Farms of Large-Family Types									Mean of Per-centages
	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	Total	
3·6 and less than 3·8							1		1	80
3·8 " " " 4·0		1		2		1			4	50
4·0 " " " 4·2	1				1		1		3	53
4·2 " " " 4·4				1					1	50
4·4 " " " 4·6	4	1	1	2	1	2	1		12	44
4·6 " " " 4·8	2	1	1	1		1	3		9	52
4·8 " " " 5·0	1		2		1	4			9	59
5·0 " " " 5·2		1		1	1	2	1	1	7	64
5·2 " " " 5·4			1	1		1		1	3	53
5·4 " " " 5·6							1		1	80
5·6 " " " 5·8										
5·8 " " " 6·0				1					1	50
Total	8	4	5	9	4	11	8	2	51	
Mean of averages	4·5	4·5	4·8	3·9	4·5	4·7	4·5	4·9		

It is obvious on examination of Statement CLVI that no such correlation exists. Evidently type of farming is not an important cause of the variation from census division to census division in average size of farm household.*

BRITISH COLUMBIA

In Statement CXVII, page 130, the average size of the British Columbia rural household was given as 3·50 persons per household and the average size of the farm household as 4·00. That British Columbia has much the smallest average rural household of any of the provinces is partly due to the small proportion, 32 p.c., of rural households living on farms. The average farm household, however, is also smaller in British Columbia than in any other province. It seems, therefore, that the small size of the British Columbia rural household is due also to the small size of the farm households.

*In a study of types of farms now in progress at the Dominion Bureau of Statistics, the incidence of type of farm on farm population and size of farm household will be thoroughly analysed.

CLVII.—AVERAGE SIZE OF FARM HOUSEHOLD AND RELEVANT DATA, BRITISH COLUMBIA, BY CENSUS DIVISIONS, 1931

Census Division	Persons per Farm Household	Farm Population	Farm Households	Value of Products per Farm, 1930	Rural Population as P.C. of 1921
				$	
British Columbia	4·00	102,367	25,575	1,396	108
Division No. 1	3·80	3,067	808	1,144	139
Division No. 2	5·18	10,951	2,116	950	114
Division No. 3	4·13	16,340	3,955	1,443	112
Division No. 4	3·94	33,524	8,512	1,721	89
Division No. 5	3·71	14,877	4,012	1,237	126
Division No. 6	4·07	10,963	2,695	1,626	123
Division No. 7	3·79	971	256	755	124
Division No. 8	3·83	7,692	2,009	935	107
Division No. 9	3·11	497	160	971	90
Division No. 10	3·31	1,052	1,052	831	327

Division No. 2 is the only census division in British Columbia which has a larger farm household than the all-Canada average, 4·90. In every other census division the average is well below 4·90. In Divisions No. 9 and No. 10 in the northern parts of the province, the average household is extremely small but, since the population of these two divisions is small, they do not have much weight in determining the provincial average. The smallness of the average farm household arises from its smallness throughout the provinces, particularly in Divisions No. 4 (surrounding Vancouver) and No. 5 (Vancouver Island), which contain nearly half the households in the province.

Summary.—In this chapter we have traced the effects of population growth on the average size of the farm household in 218 counties and census divisions. It was found that, during the first years of colonization in a new district, the average farm household was small due to the presence of a high proportion of unmarried or newly married farm operators. In such a district, however, the birth rate is always high responding to the low density of population so that its small families are potential large families. Consequently, as the families become completed the average size of the household steadily increases until it reaches a peak. After the peak has been reached the average generally decreases as the large families are breaking up, emigrating to the cities or settling on farms of their own. Continued emigration acts to steadily reduce the average persons per household since it represents a drain on the supply of family heads at the ages of maximum family responsibilities. As a result of the importance of population movements in determining average household size, the latter can be used as a measure of fertility only in regions where there is little immigration or emigration. Decrease in average size of household does not necessarily imply that the birth rate has decreased nor an increase that it has increased. The interpretation of the significance of average household size is a complex problem and requires careful analysis.

CHAPTER XI

REGIONAL DIFFERENCES IN FAMILY SIZE

How does average family size vary geographically? Census compilations are generally available for individual provinces and, although the provinces do not necessarily represent distinct and homogeneous economic units, they are the fundamental divisions into which Canada has been divided. In Statement CLVIII the number of children per normal family is given for rural and urban parts of the nine provinces.

CLVIII.—CHILDREN PER NORMAL FAMILY AND RANK OF PROVINCES IN DECREASING ORDER OF MAGNITUDE OF FAMILY SIZE, RURAL AND URBAN BY SIZE GROUPS, CANADA AND PROVINCES, 1931

Province	Total		Rural		Urban 30,000 and over		Urban 1,000–30,000		Urban under 1,000	
	Children per Family	Rank	Children per Family	Rank	Children per Family	Rank	Children per Family	Rank	Children per Family	Rank
CANADA	2·32	–	2·62	–	1·95	–	2·22	..	2·19	–
Prince Edward Island	2·39	5	2·44	6	–	5	2·25	4	2·15	4
Nova Scotia	2·40	4	2·43	7	2·10	2	2·50	2	2·11	5
New Brunswick	2·66	2	2·88	3	2·05	3	2·34	3	2·18	3
Quebec	2·91	1	3·55	1	2·39	1	2·86	1	2·66	1
Ontario	1·90	8	2·10	8	1·71	8	1·86	8	1·67	9
Manitoba	2·35	6	2·71	4	1·85	6	2·21	5	2·07	7
Saskatchewan	2·62	3	2·90	2	1·91	4	2·13	6	2·22	2
Alberta	2·30	7	2·57	5	1·79	7	2·08	7	2·10	6
British Columbia	1·72	9	1·83	9	1·57	9	1·82	9	1·79	8

The provinces have been ranked according to family size in the above statement and it will be seen at once that Quebec has the largest average family in each rural and urban division. British Columbia has the smallest average family except in the case of the urban-under-1,000 group where the average size of the British Columbia family is somewhat larger than that of the Ontario family.

Taking the provinces as a whole, New Brunswick and Saskatchewan rank second and third, respectively, in average family size. Nova Scotia and Prince Edward Island come next in line, ranking fourth and fifth, respectively, followed by Manitoba, Alberta, Ontario and British Columbia. The most striking observation is the small size of the average family in Ontario and British Columbia as compared with that in the other provinces. This low ranking in family size is peculiar to each rural and urban division so that it cannot be attributed to the rural and urban distribution.

There is generally a considerable difference in family size between the rural and urban divisions within each province. On examination of Statement CLVIII, it will be seen that the average *rural* family is largest in eight of the nine provinces, the exception being Nova Scotia where the urban-1,000-30,000 family is the largest. On the other hand, the average urban-30,000-and-over family is smallest in every province except Ontario. For Canada as a whole the urban-1,000-30,000 family is slightly larger than the urban-under-1,000 family and this applies to all of the provinces with the exception of Saskatchewan and Alberta. This might appear to be a discontinuity in the trend of decreasing family size with increasing degree of urbanization. The discontinuity is apparent rather than real, however, and this may be explained by the fact that the age distribution of family heads is more favourable to large average family size in the urban-1,000-30,000 group than in the urban-under-1,000 group. This will be evident on examining Statement LII, page 69, Chapter VI, and more attention will be paid to it later. In passing it is interesting to note that the positive differences in average size between the urban-1,000-30,000 family and the urban-under-1,000 family are largest in Nova Scotia, Quebec and

Ontario, the most highly industrialized provinces. It was observed in Chapter VI, page 173, that children leave home earlier in the urban-under-1,000 localities than in the urban-1,000-30,000 localities, particularly in Ontario and Quebec. This will partly account for the smaller size of the family in the former.

Distribution of Normal Families According to Number of Children.—In Chapter IX the distribution of normal families according to the number of children living at home was com-

CLIX.—PERCENTAGE DISTRIBUTION OF NORMAL FAMILIES ACCORDING TO NUMBER OF CHILDREN, RURAL AND URBAN BY SIZE GROUPS, CANADA AND PROVINCES, 1931

Locality	P.C. of Normal Families with Given No. of Children									
	All Sizes	0	1	2	3	4	5	6	7–9	10 or more
CANADA	100·00	23·96	21·06	18·11	12·67	8·55	5·68	3·80	5·12	1·05
Rural	100·00	21·70	18·97	16·99	12·90	0·42	6·70	4·76	6·98	1·58
Urban 30,000 and over	100·00	26·46	23·67	19·59	12·47	7·45	4·39	2·61	2·91	0·45
Urban 1,000–30,000	100·00	24·40	21·84	18·47	12·60	8·36	5·44	3·53	4·53	0·83
Urban under 1,000	100·00	27·49	20·03	17·14	12·21	8·34	5·56	3·72	4·65	0·86
Prince Edward Island	100·00	24·29	20·12	16·59	12·45	8·99	6·61	4·39	5·63	0·03
Rural	100·00	23·66	19·79	16·64	12·75	9·07	6·72	4·53	5·91	0·93
Urban 30,000 and over	–	–	–	–	–	–	–	–	–	–
Urban 1,000–30,000	100·00	25·73	21·62	16·45	11·67	8·65	6·18	3·94	4·90	0·77
Urban under 1,000	100·00	29·91	19·46	16·22	10·27	9·01	6·67	3·96	3·24	1·26
Nova Scotia	100·00	23·51	20·38	17·00	12·50	9·26	6·37	4·39	5·66	0·93
Rural	100·00	24·56	19·60	16·42	12·26	9·09	6·52	4·49	5·97	1·09
Urban 30,000 and over	100·00	24·79	22·72	18·76	12·43	8·91	5·36	3·15	3·54	0·34
Urban 1,000–30,000	100·00	21·01	20·88	17·28	12·96	9·77	6·53	4·73	5·96	0·88
Urban under 1,000	100·00	27·19	20·51	18·24	12·59	8·11	5·45	3·18	4·28	0·45
New Brunswick	100·00	21·85	19·00	16·31	12·10	0·43	7·04	5·21	7·65	1·41
Rural	100·00	20·73	17·42	15·24	12·17	9·95	7·65	5·96	9·13	1·75
Urban 30,000 and over	100·00	25·08	23·18	19·58	12·37	7·64	5·12	3·00	3·51	0·52
Urban 1,000–30,000	100·00	23·43	21·62	17·88	11·72	8·85	6·20	4·16	5·31	0·83
Urban under 1,000	100·00	27·82	21·30	16·04	12·03	7·77	6·52	2·01	5·51	1·00
Quebec	100·00	21·81	16·98	15·03	12·00	9·42	7·33	5·67	9·24	2·52
Rural	100·00	18·83	13·38	12·49	11·17	9·91	8·61	7·29	13·87	4·45
Urban 30,000 and over	100·00	24·46	19·91	16·92	12·54	8·92	6·25	4·28	5·62	1·10
Urban 1,000–30,000	100·00	20·57	17·52	15·92	12·60	9·65	7·41	5·59	8·61	2·13
Urban under 1,000	100·00	27·53	16·49	13·70	10·74	8·83	6·66	5·61	8·39	2·05
Ontario	100·00	26·98	23·90	19·51	12·42	7·44	4·32	2·48	2·63	0·32
Rural	100·00	25·17	22·24	18·85	12·98	8·35	5·14	3·15	3·61	0·51
Urban 30,000 and over	100·00	27·99	25·71	20·57	12·13	6·61	3·45	1·78	1·62	0·14
Urban 1,000–30,000	100·00	27·59	24·09	19·42	12·16	7·27	4·26	2·40	2·53	0·28
Urban under 1,000	100·00	34·74	23·07	16·32	10·56	6·31	4·08	2·33	2·37	0·22
Manitoba	100·00	21·24	20·98	19·35	14·04	9·18	6·12	3·79	4·58	0·72
Rural	100·00	18·31	18·51	18·00	14·51	10·28	7·48	5·07	6·65	1·10
Urban 30,000 and over	100·00	25·17	24·47	21·29	13·45	7·53	4·09	2·06	1·80	0·14
Urban 1,000–30,000	100·00	21·73	22·22	20·05	13·71	9·13	6·02	3·11	3·64	0·39
Urban under 1,000	100·00	26·22	20·61	18·85	13·59	8·72	5·34	3·16	3·21	0·30
Saskatchewan	100·00	19·12	10·27	18·29	14·04	10·27	6·89	4·72	6·26	1·14
Rural	100·00	16·93	17·58	17·35	14·08	11·03	7·80	5·66	7·05	1·54
Urban 30,000 and over	100·00	24·06	24·87	21·00	13·65	7·76	4·10	2·23	2·06	0·27
Urban 1,000–30,000	100·00	22·09	22·89	19·99	14·39	9·26	5·01	2·94	3·08	0·35
Urban under 1,000	100·00	23·85	19·93	19·34	13·85	9·41	5·79	3·52	3·79	0·52
Alberta	100·00	21·13	21·50	19·71	14·07	9·29	5·81	3·63	4·25	0·61
Rural	100·00	19·17	19·48	18·43	14·18	10·41	6·99	4·65	5·78	0·91
Urban 30,000 and over	100·00	25·09	25·58	21·91	13·50	6·99	3·49	1·72	1·58	0·14
Urban 1,000–30,000	100·00	22·14	22·82	21·13	14·41	8·90	4·88	2·80	2·67	0·25
Urban under 1,000	100·00	22·30	22·52	20·82	14·71	8·50	5·22	2·87	2·80	0·26
British Columbia	100·00	28·73	24·41	20·67	12·45	6·74	3·50	1·81	1·54	0·15
Rural	100·00	28·50	23·07	19·60	12·72	7·36	4·19	2·22	2·13	0·21
Urban 30,000 and over	100·00	29·94	25·97	21·41	11·82	5·84	2·64	1·34	0·06	0·08
Urban 1,000–30,000	100·00	25·81	23·91	21·73	13·54	7·47	3·87	1·99	1·55	0·13
Urban under 1,000	100·00	28·72	22·58	20·38	12·22	7·94	4·67	1·75	1·46	0·28

pared with the estimated size distribution of completed biological families. The manner in which the percentage distribution of normal families according to number of children living at home varies from region to region may be seen from Statement CLIX. In order that the frequency of a family of given size in any region may be readily compared with the frequency throughout Canada, the percentages of families of each size in every region have been indexed with the percentages of the families of the same size for Canada as a base in Statement CLX.

CLX.—FREQUENCIES OF FAMILIES OF EACH SIZE INDEXED ON CANADA BASE, RURAL AND URBAN BY SIZE GROUPS, CANADA AND PROVINCES, 1931

Locality	Average Children per Family	Index of Frequency for Families with Given No. of Children								
		0	1	2	3	4	5	6	7-9	10 or more
CANADA	2·32	100	100	100	100	100	100	100	100	100
Rural	2·62	91	90	94	102	110	118	125	136	150
Urban 30,000 and over	1·95	110	112	108	98	87	77	69	57	43
Urban 1,000-30,000	2·22	102	104	102	99	98	96	93	88	79
Urban under 1,000	2·19	115	95	95	96	98	98	98	91	82
Prince Edward Island	2·39	101	96	92	98	105	116	116	110	89
Rural	2·44	99	94	92	101	106	118	119	115	89
Urban 30,000 and over	–	–	–	–	–	–	–	–	–	–
Urban 1,000-30,000	2·25	107	103	91	92	101	109	104	97	73
Urban under 1,000	2·15	125	92	90	81	105	117	104	63	120
Nova Scotia	2·40	98	97	94	99	108	112	116	111	89
Rural	2·43	103	93	91	97	106	115	118	117	104
Urban 30,000 and over	2·10	103	108	104	98	104	94	83	69	32
Urban 1,000-30,000	2·50	88	99	95	102	114	115	124	116	84
Urban under 1,000	2·11	113	97	101	99	95	96	84	84	43
New Brunswick	2·66	91	90	90	96	110	124	137	149	134
Rural	2·88	87	83	84	96	116	135	157	178	167
Urban 30,000 and over	2·05	105	110	108	98	89	90	79	69	50
Urban 1,000-30,000	2·34	98	103	99	93	104	109	109	104	79
Urban under 1,000	2·18	116	101	89	95	91	115	53	108	95
Quebec	2·91	91	81	83	95	110	129	149	180	240
Rural	3·55	79	64	69	88	116	152	191	271	424
Urban 30,000 and over	2·39	102	95	93	99	104	110	113	110	105
Urban 1,000-30,000	2·86	86	83	88	99	113	130	147	168	203
Urban under 1,000	2·66	115	78	76	85	103	117	148	164	195
Ontario	1·90	113	113	108	98	87	76	65	51	30
Rural	2·10	105	106	104	102	98	90	83	71	49
Urban 30,000 and over	1·71	117	122	114	96	77	61	47	32	13
Urban 1,000-30,000	1·86	115	114	107	96	85	75	63	49	27
Urban under 1,000	1·67	145	110	90	83	74	72	61	46	21
Manitoba	2·35	89	100	107	111	107	108	100	89	69
Rural	2·71	76	88	99	115	120	132	133	130	113
Urban 30,000 and over	1·85	105	116	118	106	88	72	54	35	13
Urban 1,000-30,000	2·21	91	106	111	108	107	106	82	71	37
Urban under 1,000	2·07	109	98	104	107	102	94	83	63	29
Saskatchewan	2·62	80	92	101	111	120	121	124	122	109
Rural	2·90	71	83	96	111	129	137	149	155	147
Urban 30,000 and over	1·91	100	118	116	108	91	72	59	40	26
Urban 1,000-30,000	2·13	92	109	110	114	108	88	77	60	33
Urban under 1,000	2·22	100	95	107	109	110	102	93	74	50
Alberta	2·30	88	102	109	111	109	102	96	83	58
Rural	2·57	80	92	102	112	122	123	122	113	87
Urban 30,000 and over	1·79	105	121	121	107	82	61	45	31	13
Urban 1,000-30,000	2·08	92	108	117	114	104	85	74	52	24
Urban under 1,000	2·10	93	107	115	116	99	92	76	55	25
British Columbia	1·72	120	116	114	98	79	62	48	30	14
Rural	1·83	119	110	108	100	86	74	58	42	20
Urban 30,000 and over	1·57	125	123	118	93	68	46	35	19	7
Urban 1,000-30,000	1·82	108	114	120	107	87	68	52	30	12
Urban under 1,000	1·79	120	107	113	96	93	82	46	29	27

It is evident from Statement CLX that there is a large variability from region to region in the proportions of families of each size. The range in the indices for each family size may be compared as follows:—

Item	For Families with Given No. of Children								
	0	1	2	3	4	5	6	7-9	10 or more
High index	145	123	120	115	129	152	191	271	424
Low index	71	64	69	81	68	61	35	19	7
Range	74	59	51	34	61	91	156	252	417

The range decreases with increasing family size until we reach the family of 3 after which it commences to increase rapidly being very large in the case of families with 10 or more children. Since the average children per family ranges from 1·57 to 3·55, it is apparent that the proportions of families of those sizes which lie close to the mean remain relatively constant from region to region while there is a marked variability in the proportion of families of extreme sizes, particularly the very large families. The variability in the percentage of childless families partly results from the fact that aged couples whose children have all left home are much more numerous in some regions than in others. Consequently, a high proportion of childless families is not necessarily indicative of sterile marriages.

Since the number of children per family for Canada is 2·32, it is obvious that a frequency greater than that for Canada of families of any size above 3 has the effect of raising the regional average while a greater frequency of families of 0, 1 or 2 children lowers the regional average. For the sake of convenience, we may refer to families without children as childless, those with 1 or 2 children as small, those with 3, 4 or 5 children as large, and those with 6 or more children as very large. Considering the rural and urban divisions of Canada, the average rural family is larger than that for Canada, while each of the average urban families is smaller than the Canada average. Rural families of all sizes above 2 have frequency indices greater than 100, while families of 0, 1 or 2 children have indices less than 100. It will be noted that the frequency of very large families is extremely high in the rural parts, which principally accounts for the large average size of the family there.

In the case of families in the urban-30,000-and-over group the frequencies of childless and small families exceed 100 while the indices for large families are all less than 100. It is not, however, so much the high frequency of small families as the low proportions of very large families which reduces the average size of the family to 1·95. Although the urban-1,000-30,000 average is somewhat less than the Canada average, the size distribution of families in this group most closely resembles the all-Canada distribution. The difference in the averages is due to a frequency of small and childless families slightly above 100 and lower frequencies of large families. There is a noticeable drop in the frequencies of very large families. The interesting feature of the distribution of urban-under-1,000 families is the high frequency of childless families. Very large families are more frequent in the urban-under-1,000 group than in any other urban group but not nearly so frequent as in the rural parts. The high frequency of childless families reflects the presence in small villages of retired farmers and other aged couples whose children have left home. If we regard families with 2 or 3 children to be of a standard size, it will be seen that standard families are least numerous in the urban-under-1,000 parts and most frequent in the cities of 30,000 and over. *There is a tendency for the city families to be of a standard or typical size and for village and country families to range in size.* This is easily seen by comparing standard deviations in family size:—

	Standard Deviation in Children per Family
CANADA	2·28
Rural	2·48
Urban 30,000 and over	1·95
Urban 1,000-30,000	2·19
Urban under 1,000	2·24

Why is this tendency for families to spread in size more marked in the rural districts and small villages than in the large cities? While the age distribution of the family heads in the urban-under-1,000 group accounts for the small families, it counteracts rather than favours the presence of very large families. It was suggested in Chapter V that the difficulty in obtaining housing accommodation for large families was a serious check to population growth since very large families make such an important contribution to natural increase. There are no data available with regard to housing accommodation for large families in the country but overcrowding does not seem to entail the same hardships there as in the large cities. For instance, the family of 10 living in a 2-room house on a western farm is, in general, not nearly so badly off as a family of the same size with similar accommodation in a large city. Inability to secure adequate housing accommodation is only one of the economic checks on large families in the cities. The provision of clothing and food for a family of 10 where everything must be paid for in cash is a difficult task even for the prosperous father, while on the farm much of the food is produced at home and clothing needs are fewer. The country children in addition have plenty of room for play and recreation and the facilities to provide their own amusement while in the city it is difficult to meet such needs, less elemental than food and clothing, but very real. It is, consequently, not difficult to comprehend why the extreme density of population in the large cities tends to reduce family size. It must also be borne in mind that the child on the farm is not entirely a charge but can assist in the work on the farm by doing light but necessary work. In the countries of Eastern Europe where farming is done almost entirely without the use of machinery and children are valuable for the work they do, large families are still very popular.

CLXI.—FREQUENCIES OF FAMILIES OF EACH SIZE, CANADA AND PROVINCES, 1931

Province	Average Children per Family	Index of Frequency of Families with Given No. of Children								
		0	1	2	3	4	5	6	7-9	10 or more
CANADA	2·32	100	100	100	100	100	100	100	100	100
Quebec	2·91	91	81	83	95	110	129	149	180	240
New Brunswick	2·66	91	90	90	96	110	124	137	149	134
Saskatchewan	2·62	80	92	101	111	120	121	124	122	109
Nova Scotia	2·40	98	97	94	99	108	112	116	111	89
Prince Edward Island	2·39	101	96	92	98	105	116	116	110	89
Manitoba	2·35	89	100	107	111	107	108	100	89	69
Alberta	2·30	88	102	109	111	109	102	96	83	58
Ontario	1·90	113	113	108	98	87	76	65	51	30
British Columbia	1·72	120	116	114	98	79	62	48	30	14

In Statement CLXI the provinces are ranked in order of decreasing average family size. It is interesting to note that they would have the same ranking based on the frequencies of families with 6, 7-9 or 10 or more children which indicates the weight of the very large families in determining average family size. Although Quebec has a higher frequency of childless families than Saskatchewan, Manitoba or Alberta, the extremely high percentage of families with 6 or more children (17·43) makes the average size of the family very large. This is also true of New Brunswick which ranks second to Quebec but in the case of Saskatchewan the large average size of the family results not so much from the frequency of very large families as from the high proportion of moderately large families and the fewness of childless families.

The size distributions of families in Nova Scotia and Prince Edward Island are similar, the latter province having a slightly higher percentage of childless families. Referring to Statement CLX, page 169, an interesting feature of family size in Nova Scotia will be noted; the average size of the family in localities with population 1,000-30,000 is greater than the rural average and considerably exceeds the urban 1,000-30,000 average in any of the other provinces with the exception of Quebec. This can be explained partly on a religious and partly on an occupational basis but not on a racial basis since 86·2 p.c. of the heads of families of two or more persons are British. A large percentage of the urban-1,000-30,000 population of Nova Scotia is confined to coal mining towns—Sydney, Glace Bay, New Glasgow, North Sydney, Stellarton, Sydney Mines, etc.,—and since coal miners, as a class, tend to have large families they

probably raise the average size of the family in this region. In addition, a large percentage of the British population is Roman Catholic. Comparing the size distribution of families in rural Nova Scotia with that for the urban-1,000-30,000 part, it will be seen that, while very large families are scarcely more frequent in the former region, the latter has a high proportion of large families and a much lower proportion of childless families. It might be inferred that the difficulty of supporting a large family on the small Nova Scotian farms motivates men with families to seek employment in the coal mines. The average sizes of families in Manitoba and Alberta do not differ greatly from that for Canada but it is apparent that there is less dispersion in family size than for Canada. This is most clearly brought out by comparing the standard deviations in the number of children per family which were as follows:—

CANADA	2·28
Manitoba	2·16
Alberta	2·11

The high proportions of families of medium size will be noted in each Prairie Province. Saskatchewan has a higher frequency of very large families and fewer childless families than its two neighbouring provinces with the result that its average family is larger. This may be noted in Statement CLX.

Ontario and British Columbia are distinctive for the small average sizes of their families, the average being particularly small in the latter province. This is largely due to the scarcity of very large families in both provinces. Families of 10 or more children in Quebec are eight times as numerous as in Ontario and seventeen times as numerous as in British Columbia. It will be seen from Statement CLX that the paucity of very large families is typical of the rural and urban divisions of each province; also, that the frequencies of childless and small families are higher than in the other provinces. Childless families are either (1) broken families where the parents are aged and the children have all left home, (2) families of young married couples who have not yet had any children, (3) families which will never produce any children. The frequency of childless families in the rural and urban-under-1,000 parts of Ontario may be explained by the presence of many families of the first type. Recently married couples are probably more numerous in the cities than in the towns and villages but it would seem probable that the percentage of sterile marriages is higher in British Columbia than in the other provinces. This may be because many of the heads of families marry late in life.

Incidence of Age Distribution of Family Heads on Family Size.—In Statement CLXII the crude averages for children per family are compared with averages adjusted for the age distribution of family heads in the following manner. In Table 8, Part II, page 192, the average number of children per family is given by age groups of heads of families for each region. For example, the averages for rural Ontario were as follows:—

Age Group	Children per Family	Number of Heads in Age Group for Canada	Product
Under 25	0·82	67,889	53,000
25-34	1·68	431,384	656,000
35-44	2·73	567,599	1,379,000
45-54	2·70	509,411	1,233,000
55 and over	1·40	572,765	739,000
		2,149,048	4,060,000
Mean	-	-	2·10

The average for children per family for each age group was multiplied by the number of family heads in the age group for Canada, the products added and divided by the total number of heads at all ages. It will be noted that the averages apply to families of two or more persons since no data were available with regard to the ages of heads of normal families.

CLXII.—AVERAGE NUMBER OF CHILDREN PER FAMILY OF TWO OR MORE PERSONS, CRUDE AND ADJUSTED FOR AGE DISTRIBUTION OF HEADS, AND RANK OF PROVINCES IN DECREASING ORDER OF FAMILY SIZE, RURAL AND URBAN BY SIZE GROUPS, CANADA AND PROVINCES, 1931

Province	Total		Rural		Urban 30,000 and over		Urban 1,000-30,000		Urban under 1,000	
	Crude	Adjusted	Crude	Adjusted	Crude	Adjusted	Crude	Adjusted	Crude	Adjusted
CHILDREN PER FAMILY OF TWO OR MORE PERSONS										
CANADA	2·27	2·27	2·55	2·58	1·95	1·92	2·19	2·19	2·16	2·20
Prince Edward Island	2·28	2·40	2·32	2·45	–	–	2·19	2·29	2·06	2·15
Nova Scotia	2·32	2·41	2·32	2·48	2·07	2·09	2·42	2·45	2·04	2·18
New Brunswick	2·56	2·64	2·76	2·88	2·01	2·02	2·28	2·30	2·13	2·17
Quebec	2·83	2·87	3·43	3·57	2·37	2·37	2·80	2·83	2·57	2·75
Ontario	1·88	1·89	2·05	2·10	1·72	1·70	1·85	1·87	1·65	1·83
Manitoba	2·32	2·27	2·65	2·62	1·87	1·81	2·19	2·12	2·07	2·10
Saskatchewan	2·58	2·50	2·84	2·77	1·93	1·86	2·13	2·02	2·21	2·12
Alberta	2·28	2·22	2·53	2·49	1·81	1·74	2·08	2·00	2·09	1·98
British Columbia	1·73	1·69	1·83	1·80	1·60	1·55	1·83	1·77	1·80	1·78
RANK OF PROVINCE ACCORDING TO AVERAGES										
Prince Edward Island	5	5	6	7	5	5	4	4	4	4
Nova Scotia	4	4	7	6	2	2	2	2	5	2
New Brunswick	2	2	3	2	3	3	3	3	3	3
Quebec	1	1	1	1	1	1	1	1	1	1
Ontario	8	8	8	8	8	8	8	8	9	8
Manitoba	6	6	4	4	6	6	5	5	7	6
Saskatchewan	3	3	2	3	4	4	6	6	2	5
Alberta	7	7	5	5	7	7	7	7	6	7
British Columbia	9	9	9	9	9	9	9	9	8	9

The first two columns of Statement CLXII apply to the provinces as a whole. The adjusted averages are larger than the crude averages in each of the Eastern Provinces and smaller in each of the Western Provinces, indicating that the age distribution of heads decreased crude average family size in the East and increased it in the West. Since the average size of the Quebec family is increased by adjusting for age and that of the British Columbia family is decreased, the operation widens rather than narrows the range in the averages between provinces. It is interesting to note that the provinces have the same ranking after adjustment as before. The largest difference between the crude and adjusted averages was for Prince Edward Island, 0·12. It is apparent that the differential age distribution of family heads does little to account for the dispersion in family size from region to region.

Examining the effect of adjustment on the averages for the rural and urban divisions of Canada it will be seen that family size is increased for the rural and "urban-under-1,000" parts and is decreased for the "urban-30,000-and-over" group. No change was registered in the "urban-1,000-30,000" group. It will also be noticed that the "urban-under-1,000" average is now slightly larger than the "urban-1,000-30,000" average, the averages in each part comparing as follows:—

Locality	Adjusted Average Children per Family
Rural	2·58
Urban under 1,000	2·20
Urban 1,000-30,000	2·19
Urban 30,000 and over	1·92

Incidence of Race on Family Size.—The averages given in Statement CLXIII provide material for a consideration of the incidence of racial origin of head on family size. Since no data were available with regard to racial origins of heads of normal families, the averages apply to all families of 2 or more persons. Only three groups are given, British, French and other. Family size does not vary greatly among the races constituting the British group, *viz.*, English, Irish, Scottish and other British. It was not possible to separate French Canadians from French born in France. "Other" races naturally comprise an extremely heterogeneous lot but these have not been subdivided due to the difficulty of obtaining really homogeneous groups. The first

column of Statement CLXIII gives the crude average number of children per family for each region. The second column gives averages adjusted for the racial content of the population, the adjustment having been affected in the same way as that for age in Statement CLXII. The last three columns give the contributions to the adjusted averages by race while the three preceding columns give the contributions to the crude average.

CLXIII.—CRUDE AND ADJUSTED AVERAGE NUMBER OF CHILDREN PER FAMILY OF TWO OR MORE PERSONS SHOWING CONTRIBUTION BY EACH RACIAL GROUP, RURAL AND URBAN BY SIZE GROUPS, CANADA AND PROVINCES, 1931

Region	Children per Family				Contribution to Crude Average by Racial Groups			Adjusted Average (all races)	Contribution to Adjusted Average by Racial Groups		
	All Races	Crude Average									
		British	French	Other	British	French	Other		British	French	Other
CANADA	2·27	1·88	3·07	2·43	1·08	0·75	0·44	-	-	-	-
Rural	2·55	2·07	3·46	2·69	1·09	0·84	0·62	2·52	1·18	0·85	0·49
Urban 30,000 and over	1·95	1·68	2·58	2·07	1·03	0·59	0·33	1·97	0·96	0·63	0·38
Urban 1,000-30,000	2·19	1·84	3·01	2·15	1·12	0·79	0·28	2·18	1·05	0·74	0·39
Urban under 1,000	2·16	1·81	2·73	2·28	0·99	0·79	0·38	2·13	1·04	0·67	0·42
Prince Edward Island	2·28	2·22	2·72	1·98	1·89	0·38	0·03	2·30	1·27	0·67	0·36
Rural	2·32	2·27	2·68	1·92	1·94	0·35	0·03	2·31	1·30	0·66	0·35
Urban 1,000-30,000	2·19	2·07	2·91	2·14	1·73	0·42	0·04	2·28	1·18	0·71	0·39
Urban under 1,000	2·06	2·02	2·43	1·89	1·78	0·23	0·05	2·10	1·16	0·59	0·35
Nova Scotia	2·32	2·27	2·73	2·28	1·76	0·27	0·28	2·39	1·30	0·67	0·42
Rural	2·32	2·26	2·72	2·28	1·65	0·35	0·32	2·38	1·29	0·67	0·42
Urban 30,000 and over	2·07	2·04	2·44	2·10	1·76	0·13	0·18	2·15	1·17	0·60	0·38
Urban 1,000-30,000	2·42	2·39	2·86	2·36	1·94	0·21	0·27	2·50	1·37	0·70	0·43
Urban under 1,000	2·04	2·04	1·85	2·21	1·81	0·07	0·16	2·02	1·17	0·45	0·40
New Brunswick	2·56	2·21	3·46	2·27	1·49	0·98	0·09	2·54	1·27	0·85	0·42
Rural	2·76	2·36	3·54	2·28	1·46	1·22	0·08	2·64	1·35	0·87	0·42
Urban 30,000 and over	2·01	1·94	2·96	2·31	1·74	0·13	0·14	2·25	1·11	0·72	0·42
Urban 1,000-30,000	2·28	2·01	3·13	2·19	1·46	0·74	0·08	2·32	1·15	0·77	0·40
Urban under 1,000	2·13	1·91	3·55	2·19	1·56	0·45	0·12	2·36	1·09	0·87	0·40
Quebec	2·83	1·91	3·11	2·20	0·34	2·35	0·14	2·25	1·09	0·76	0·40
Rural	3·43	2·29	3·59	2·51	0·24	3·13	0·06	2·65	1·31	0·88	0·46
Urban 30,000 and over	2·37	1·82	2·62	2·15	0·44	1·68	0·25	2·07	1·04	0·64	0·39
Urban 1,000-30,000	2·80	1·83	3·07	2·20	0·35	2·36	0·09	2·20	1·05	0·75	0·40
Urban under 1,000	2·57	1·65	2·76	1·85	0·25	2·30	0·02	1·96	0·94	0·68	0·34
Ontario	1·88	1·75	2·81	2·05	1·35	0·20	0·33	2·07	1·00	0·69	0·38
Rural	2·05	1·91	3·12	2·14	1·44	0·26	0·35	2·24	1·09	0·76	0·39
Urban 30,000 and over	1·72	1·63	2·33	2·00	1·29	0·11	0·32	1·87	0·93	0·57	0·37
Urban 1,000-30,000	1·85	1·71	2·74	2·02	1·31	0·23	0·31	2·02	0·98	0·67	0·37
Urban under 1,000	1·65	1·55	2·56	1·72	1·27	0·20	0·18	1·83	0·89	0·63	0·31
Manitoba	2·32	1·97	3·09	2·73	1·13	0·18	1·01	2·39	1·13	0·76	0·50
Rural	2·65	2·21	3·34	3·04	1·10	0·25	1·30	2·65	1·27	0·82	0·56
Urban 30,000 and over	1·87	1·70	1·94	2·19	1·11	0·04	0·72	1·84	0·97	0·47	0·40
Urban 1,000-30,000	2·19	1·96	2·96	2·48	1·27	0·28	0·64	2·29	1·12	0·72	0·45
Urban under 1,000	2·07	1·93	2·43	2·45	1·40	0·08	0·59	2·14	1·10	0·59	0·45
Saskatchewan	2·58	2·19	3·05	3·00	1·14	0·15	1·29	2·55	1·25	0·75	0·55
Rural	2·84	2·39	3·24	3·17	1·04	0·18	1·62	2·74	1·37	0·79	0·58
Urban 30,000 and over	1·93	1·83	2·24	2·21	1·35	0·05	0·53	2·00	1·05	0·55	0·40
Urban 1,000-30,000	2·13	2·01	2·60	2·42	1·43	0·10	0·60	2·23	1·15	0·64	0·44
Urban under 1,000	2·21	2·04	2·63	2·47	1·25	0·14	0·82	2·26	1·17	0·64	0·45
Alberta	2·28	2·03	2·75	2·59	1·16	0·13	0·99	2·30	1·16	0·67	0·47
Rural	2·53	2·25	2·98	2·75	1·02	0·16	1·35	2·52	1·29	0·73	0·50
Urban 30,000 and over	1·81	1·76	2·02	1·97	1·38	0·06	0·37	1·80	1·01	0·49	0·36
Urban 1,000-30,000	2·08	2·00	2·28	2·30	1·42	0·06	0·60	2·12	1·14	0·56	0·42
Urban under 1,000	2·09	1·96	2·61	2·22	1·21	0·19	0·69	2·17	1·12	0·64	0·41
British Columbia	1·73	1·63	1·88	2·07	1·26	0·04	0·43	1·77	0·93	0·46	0·38
Rural	1·83	1·70	2·07	2·09	1·16	0·05	0·62	1·86	0·97	0·51	0·38
Urban 30,000 and over	1·60	1·54	1·58	1·97	1·31	0·03	0·26	1·63	0·88	0·39	0·36
Urban 1,000-30,000	1·83	1·75	1·91	2·19	1·38	0·04	0·41	1·87	1·00	0·47	0·40
Urban under 1,000	1·80	1·70	2·53	2·15	1·38	0·08	0·34	1·98	0·97	0·62	0·39

Comparing crude and adjusted averages for the rural and urban parts of Canada it will be seen that the size of the rural family has been slightly decreased by the adjustment. There are not sufficient data available to adjust for age and race simultaneously but it is interesting to note that *wherever adjustment for race tends to lower family size, adjustment for age tends to raise it and vice versa* so that the effects of the two factors tend to cancel.

Locality	Children per Family		
	Actual	Adjusted for	
		Race	Age
Rural	2·55	2·52	2·58
Urban 30,000 and over	1·95	1·97	1·92
Urban 1,000-30,000	2·19	2·18	2·19
Urban under 1,000	2·16	2·13	2·20

Is the large rural family and the small city family typical of each racial group? If the rural and urban groups are ranked in order of decreasing family size, it will be seen that they follow approximately the same order for each race.

Locality	Rank of Family Size			
	All Races	British	French	Other
Rural	1	1	1	1
Urban 30 000 and over	4	4	4	4
Urban 1,000-30,000	2	2	2	3
Urban under 1,000	3	3	3	2

In every case the rural family is largest and the urban-over-30,000 family smallest. The ranges in the averages between these two groups are as follows:—

	Range in Average Children per Family
British	0·39
French	0·98
Other races	0·62

Too much significance should not be attached to differences in the absolute magnitudes of the ranges since the small range for the British is partly due to the fact that the averages were approaching a lower limit.

Adjusting for race considerably alters the provincial averages. The rankings of the provinces in order of average family size before and after adjustment are given below:—

CLXIV.—RANK OF PROVINCES IN DECREASING ORDER OF FAMILY SIZE ACCORDING TO CRUDE AND ADJUSTED AVERAGES AND FOR THE THREE RACIAL GROUPS, CANADA, 1931

Province	Rank according to			Racial Group		
	Crude Average (all races) (1)	Adjusted Average (2)	Difference (col. 1— col. 2) (3)	British (4)	French (5)	Other (6)
Quebec	1	7	−6	7	2	6
New Brunswick	2	2	-	3	1	5
Saskatchewan	3	1	2	4	4	1
Nova Scotia	4	3	1	1	5	4
Prince Edward Island	5	5	-	2	6	9
Manitoba	6	4	2	6	3	2
Alberta	7	6	1	5	8	3
Ontario	8	8	-	8	7	8
British Columbia	9	9	-	9	9	7

Quebec which formerly ranked a high first in average family size now ranks seventh, clearly indicating that the large average size of its families results from the high proportion of the population French-Canadian.

The rankings given in Statement CLXIV are quite different for each racial group. Ontario and British Columbia have consistently low ranks for each race but in the case of the other provinces the rankings vary considerably. British families are largest in Nova Scotia, French in New Brunswick, and families with heads of other racial origins in Saskatchewan. That the French family is larger in New Brunswick than in Quebec can be traced to the weight of small

families in the cities of Montreal and Quebec and the fact that the French population of New Brunswick is mostly rural. That French families tend to be large throughout Canada may be seen from Statement CLXV.

CLXV.—RANKINGS OF RACIAL GROUPS IN DESCENDING ORDER OF FAMILY SIZE IN THE 35 RURAL-URBAN GROUPS, CANADA AND PROVINCES, 1931

Rank	No. of Localities with Heads of Families in Racial Group		
	British	French	Other
1	-	28	7
2	5	6	24
3	30	1	4

French families are largest in 28 regions and smallest in only 1, which is urban-under-1,000 in Nova Scotia. In this region the families of heads belonging to other races rank first, British families second and French families third. It will be seen from Statement CLXIII, page 174, that it is the only locality where the British family is larger than the French. The explanation would appear to be that the French and British villages are in different sections of the province and that there is a high saturation in population in relation to the productiveness of the surrounding district in the French villages. Emigration has, consequently, been heavy and has left a large proportion of broken families. Other races have larger families than the French in all parts of British Columbia.

Incidence of Religion on Family Size.—Since racial composition does not account for the small size of the British Columbia family, the reason can perhaps be found in other attributes of the population. The census does not provide a break-down of family data by religion of head but it is probable that religion does have an important bearing on family size.

CLXVI.—AVERAGE NUMBER OF CHILDREN PER FAMILY, BY RACIAL ORIGIN OF HEAD, AND PERCENTAGE OF THE POPULATION ROMAN CATHOLIC, BY RACIAL ORIGIN, CITIES WITH 30,000 POPULATION AND OVER, 1931

City	Racial Origin of Head					
	British		French		Other	
	No. Children per Family	P.C. of Population Roman Catholic	No. Children per Family	P.C. of Population Roman Catholic	No. Children per Family	P.C. of Population Roman Catholic
Brantford	1·67	8·0	1·79	42·4	2·08	47·6
Calgary	1·69	7·7	1·83	64·5	1·93	26·3
Edmonton	1·84	8·9	2·12	76·9	2·01	34·9
Halifax	2·04	39·3	2·44	79·5	2·10	27·0
Hamilton	1·68	10·2	1·99	54·5	2·01	50·2
Kitchener	1·83	16·0	2·11	59·7	1·86	32·5
London	1·57	8·8	2·02	46·5	1·96	34·1
Montreal	1·80	32·3	2·52	99·2	2·16	40·9
Ottawa	1·81	28·3	2·56	95·9	2·30	28·2
Quebec	2·13	61·7	2·97	99·7	2·29	47·5
Regina	1·80	7·1	2·15	69·1	2·28	43·6
Saint John	1·94	28·5	2·96	85·6	2·31	22·3
Saskatoon	1·86	7·1	2·31	68·7	2·09	32·3
Toronto	1·59	10·1	1·82	58·7	2·00	29·7
Trois-Rivières	1·97	40·2	3·05	99·6	2·37	56·6
Vancouver	1·55	6·6	1·54	60·0	1·96	16·0
Verdun	1·83	22·0	2·58	97·7	1·73	32·5
Victoria	1·48	5·3	1·93	52·0	2·12	6·6
Windsor	1·66	15·5	2·24	89·8	1·94	48·9
Winnipeg	1·70	6·9	1·94	76·6	2·19	41·8

The following correlations were obtained between family size and percentage of population Roman Catholic for the twenty cities given in Statement CLXVI.

	Correlation
British families	·81
French families	·95
Other families	·16

The first two correlations are very high and clearly indicate that Roman Catholic families are above the average in size. Average family size in each city would seem to be determined largely by the proportion of the population adhering to the Roman Catholic religion.

Standardization of Average Family Size for Provinces.—An attempt has been made to standardize family size in each province simultaneously for the following attributes: (1) rural and urban distribution, (2) percentage Roman Catholic, (3) percentage indigenous to province, (4) racial content. The method may be followed in Statement CLXVII. Column 1 gives the crude average number of children per family and column 2 the averages adjusted for the rural and urban distribution of the population. Column 3 gives the percentage of the male population of the Roman Catholic religion and column 4 the percentage of males indigenous to the province. The regression equations relating the average number of children per family (after adjusting for rural and urban distribution) to these two factors are given beneath the data for each racial group. It is only for the British families that the percentage of the population indigenous to the province appears to have a significant weight in determining average family size, and then it is not nearly as important as the percentage Roman Catholic.

CLXVII.—STANDARDIZATION OF FAMILY SIZE OF FAMILIES HAVING HEADS (A) BRITISH, (B) FRENCH, (C) OF OTHER RACIAL ORIGINS, CANADA AND PROVINCES, 1931

Province	Children per Family		P.C. of Males		Deviations about Unweighted Mean for Canada			Standardized Children per Family
	Crude	Adjusted for Urbanization Z	Roman Catholic X	Born in Province Y	Actual	Expected	Difference	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(A) BRITISH								
CANADA	-	2·01[1]	16·4[1]	62·6[1]	-	-	-	2·01[1]
Prince Edward Island	2·22	2·19	35·5	94·4	+0·18	+0·17	+0·01	2·02
Nova Scotia	2·27	2·21	26·0	88·8	+0·20	+0·10	+0·10	2·11
New Brunswick	2·21	2·12	19·4	88·3	+0·11	+0·06	+0·05	2·06
Quebec	1·91	2·01	30·5	62·2	-	+0·08	−0·08	1·93
Ontario	1·75	1·76	10·7	74·0	−0·25	−0·01	−0·24	1·77
Manitoba	1·97	1·97	5·2	48·0	−0·04	−0·10	+0·06	2·07
Saskatchewan	2·19	2·11	6·1	40·9	+0·10	−0·11	+0·21	2·22
Alberta	2·03	2·02	7·9	35·2	+0·01	−0·11	+0·12	2·13
British Columbia	1·63	1·66	6·7	31·3	−0·35	−0·12	−0·23	1·78
Regression equation: Z = 1·787 + 0·0058X + 0·0020Y. Multiple correlation: R = ·59.								
(B) FRENCH								
CANADA	-	2·73[1]	80·4[1]	64·7[1]	-	-	-	2·73[1]
Prince Edward Island	2·72	2·73	98·4	96·0	-	+0·33	−0·33	2·40
Nova Scotia	2·73	2·63	85·3	91·9	−0·10	−0·17	+0·07	2·80
New Brunswick	3·46	3·28	98·2	90·1	+0·55	+0·33	+0·22	2·95
Quebec	3·11	3·15	99·4	97·0	+0·42	+0·37	+0·05	2·78
Ontario	2·81	2·78	89·4	75·8	+0·05	-	+0·05	2·78
Manitoba	3·09	2·81	92·6	71·2	+0·08	+0·13	−0·05	2·68
Saskatchewan	3·05	2·78	88·8	50·4	+0·05	-	+0·05	2·78
Alberta	2·75	2·53	84·7	44·9	−0·20	−0·16	−0·04	2·69
British Columbia	1·88	1·91	67·6	30·1	−0·82	−0·80	−0·02	2·71
Regression equation: Z = − 0·637 + 0·0383X − 0·0007Y. Multiple correlation: R = ·93.								
(C) OTHER								
CANADA	-	2·32[1]	34·2[1]	53·3[1]	-	-	-	2·32[1]
Prince Edward Island	1·98	1·96	37·5	60·4	−0·36	+0·05	−0·41	1·91
Nova Scotia	2·28	2·24	20·4	83·2	−0·08	−0·17	+0·09	2·41
New Brunswick	2·27	2·27	26·0	70·7	−0·05	−0·10	+0·05	2·37
Quebec	2·20	2·34	45·7	40·0	+0·02	+0·15	−0·13	2·19
Ontario	2·05	2·07	36·4	55·0	−0·25	+0·03	−0·28	2·04
Manitoba	2·73	2·71	45·5	52·3	+0·39	+0·15	+0·24	2·56
Saskatchewan	3·00	2·78	37·4	48·3	+0·46	+0·04	+0·42	2·74
Alberta	2·59	2·45	35·0	40·5	+0·13	+0·01	+0·12	2·44
British Columbia	2·07	2·08	23·9	29·6	−0·24	−0·15	−0·09	2·23
Regression equation: Z = 1·832 + 0·0134X + 0·0006Y. Multiple correlation: R = ·11.								

[1]Unweighted mean of provincial figures.

Column 5 gives the actual deviations about the unweighted Canada mean of the averages given in column 2, and column 6 the expected deviations obtained from the regression equation. The differences between these two deviations given in column 7 are the deviations after elimination of the effects of religion and floating population. Standardized averages are obtained by adding to the Canada mean.

It is interesting to compare the crude averages in column 1 with the standardized averages. Considering the British group first, it will be observed that standardization lowers the averages in Prince Edward Island, Nova Scotia and New Brunswick and raises them in all the remaining provinces.

Three population attributes evidently combined to raise the crude averages for children per family in the Maritime Provinces, *viz.*, (1) high rural content, (2) large Roman Catholic element, (3) indigenous nature. Standardization did not appreciably alter the averages for Ontario and Quebec but the averages of the Western Provinces were considerably raised, particularly for British Columbia. It will be noted that the standardized average for British Columbia is slightly larger than that for Ontario.

The French averages were closely affected by the percentage of the population Roman Catholic. It will be observed that the proportion French Roman Catholic in British Columbia is much smaller than in the other provinces and this would appear to account for the small average size of the family there since, after adjustment, the British Columbia family was not far below average.

CLXVIII.—COMPARISON OF STANDARDIZED AND CRUDE AVERAGE NUMBER OF CHILDREN PER FAMILY OF TWO OR MORE PERSONS, WITH RANK OF THE PROVINCES IN DECREASING ORDER OF MAGNITUDE OF FAMILY SIZE, CANADA, BY PROVINCES, 1931

Province	Children per Family				Difference in Averages
	Standardized	Rank	Crude	Rank	
Prince Edward Island	2·09	7	2·28	6	+0·19
Nova Scotia	2·33	3	2·32	4	−0·01
New Brunswick	2·33	2	2·56	3	+0·23
Quebec	2·19	6	2·83	1	+0·64
Ontario	2·07	9	1·88	8	−0·19
Manitoba	2·31	5	2·32	5	+0·01
Saskatchewan	2·45	1	2·58	2	+0·13
Alberta	2·32	4	2·28	7	−0·04
British Columbia	2·09	8	1·73	9	−0·36

The standardized averages for all races given in Statement CLXVIII were obtained by weighting the standardized averages for each race by the number of families of the same race in Canada. This eliminates dispersion in the averages between provinces due to differential racial content. It will be observed that the provinces, except Quebec and Alberta, have similar rankings after standardization as before. The range between the high and low average has been reduced from 0·90 to 0·38 children per family or by 58 p.c. The differences between the crude and standardized averages will indicate whether the four factors for which standardization has been effected combined to raise or lower average family size in each province.

Summary.—There are two population attributes which are so important in determining provincial average family size that they obscure the influence of less potent factors, *viz.*, (1) rural and urban distribution and (2) religious and racial composition. After standardizing for these factors, however, it appears that average family size is somewhat larger in Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta than in Prince Edward Island, Quebec, Ontario and British Columbia. The large average family in the first two provinces may have an occupational basis since a high proportion of family heads are engaged in fishing, coal mining and general farming. The vast distances of the Prairie Provinces tend to segregate the rural and village populations into isolated communities while the population of Prince Edward Island, Ontario and Quebec is more closely knit due to the absence of geographical barriers and the provision of good transportation facilities. It would appear that man does not reproduce so well when he is a member of a highly integrated society. In British Columbia it is possible that the equable climate has some bearing on average family size since it attracts a comfort-loving population who will not readily assume the burden of supporting a large family.

CHAPTER XII

CONCLUSION

This monograph has treated many attributes of the Canadian family but average size has been dealt with most thoroughly. A purely quantitative property, it is most liable to statistical treatment. Average persons per household for Canada declined from a peak of 6·29 in 1861 to a low of 4·55 in 1931. There can be little doubt that the drop points to a decrease in the average number of children per normal family, *i.e.*, to a declining birth rate.

Major Causes of Our Declining Birth Rate.—The early Canadian settlers were great individualists—they built their own homes, made much of their own furniture, produced all their own food, manufactured their clothing at home and made their own soap. Even illumination was afforded by home-made tallow candles. Very little was sold and very little was bought. In this society large families were common and children were generally regarded as an asset and a blessing.

During the last seventy years, production has been centralized and activity of the individual producers has been narrowed to a specific job. Consequently, the family has become much less self-sufficient. Several concomitants of this movement are responsible for much of the decline in our birth rate.

(1) There has been a remarkable citywards trek due to the development of large-scale industries and commercial institutions in the cities. The following figures dealing with the distribution of the Canadian population indicate the trend during the past thirty years:—

Census Year	Percentage of Population Living in			
	Cities	Towns	Villages	Rural Districts
1901	21·99	10·38	5·13	62·50
1911	28·87	12·04	4·51	54·58
1921	34·05	10·89	4·58	50·48
1931	38·36	10·37	4·97	46·30

The percentage of the population living in cities has increased steadily at the expense of the percentage living in rural districts. A large proportion of the population has been removed from the environment most favourable to natural increase to that least so. At all ages the natural increase of the town population has been less than that of the rural. It will be recalled that the barbaric tribes of Northern Europe increased much more rapidly than the population of the Roman Empire, much of which was confined to towns, with the result that the former eventually overwhelmed the latter by sheer force of numbers.

A variety of causes account for the small natural increase of town populations and it would appear that as soon as one cause is removed others come into play. In previous ages, town families were probably small due to the small numbers of their members surviving from numerous plagues and epidemics. Advances in medical science and the improvement of sanitary conditions have practically wiped out this cause. The small size of the modern city family is due largely to social and economic factors. The rural family is usually somewhat isolated and the lack of human companionship makes additional children desirable. On the other hand, city children keep the housewife at home and thereby narrow her social contacts. It is generally conceded

that the country is the most suitable environment for the child. There he enjoys comparative isolation from disease and has plenty of fresh air. The whole countryside is at his disposal for a playground. The economist would regard these as free goods. The provision of similar benefits for the city child, however, is an expensive undertaking. Much of the cost is borne by governments when they provide playgrounds, school gymnasiums and swimming pools to meet the recreational needs of children and free isolational hospitals and clinics to prevent the spread of diseases. It is obvious, however, that the expense is borne in the end by the family head in the payment of taxes. In addition, there is much out-of-pocket expense which he must meet if he is to provide his child with a happy and healthful environment. The result is that he is reluctant to assume responsibility for the support of a large family.

(2) There has undoubtedly been a very rapid increase in the proportion of heads of families dependent on wages for their living. In 1931, 56 p.c. of the heads of normal families were wage-earners. Averages for children per family according to occupational class of head were as follows:—

Industrial Status of Head	Children per Family
Employer	3·23
Own account	2·31
Wage-earner	2·17

The small average family for wage-earners probably reflects the small proportion who have large families. The wage-earner tends to restrict his family to a standard size since there is no flexibility of income with the number of his dependents. If he has a large family he must necessarily lower his standard of living and he may even suffer acute misery. In addition, he is always striving for economic independence but seldom attaining it. The insecurity complex militates against his readiness to assume the responsibility of supporting a large family.

(3) During the past seventy years there has been a marked change in farming methods and the mode of farm life. As a result, the farm family has become more like the city family in both outlook and environment and some of the factors responsible for small families in the cities have also acted to decrease the size of the farm family. The self-sufficiency of the pioneer farm family has already been pointed out. Due to the increasing emphasis placed on production for sale, the farmer has become increasingly dependent on outside sources for his general well-being. Much of the old security has, consequently, been lost and fear and pessimism have often replaced courage and optimism. In Western Canada where the farmer devotes so much attention to the production of grain, a high degree of uncertainty has been introduced by crop failures and fluctuating prices. Though it is difficult to establish direct causal relationship, one cannot help but feel that these circumstances have done much to decrease the average size of the farm household.

It has been suggested that the pioneer farmer regarded children as an asset. From an early age male children were engaged in the work of the farm while there was always plenty of work for the girls to do at home. To-day there is less work on the farm for which the boy is needed and much less work at home for the girl. Children do, moreover, represent a greater liability to the farmer. Clothes which formerly were produced at home, possibly by the children themselves, are now purchased and must be paid for in cash. A considerable proportion of the food for the farm family is to-day purchased and additional children represent additional expenditure. Even food produced at home has come to have a cash value due to the increasing emphasis placed on production for sale. The modern farmer must, consequently, regard children as a luxury.

Changing modes of production are here submitted as the most important cause of our declining birth rate. No reference has been made to the increasing use of contraceptive methods. It may often be suggested that this is entirely responsible for the decline in the birth rate. The census, of course, cannot provide statistics dealing specifically with this question but the use of contraceptive methods should be regarded as a *means* of family limitation, not as a *cause*. It is reasonable to believe, however, that the operation of the causes has been greatly facilitated by the means available.

The Maintenance of Natural Increase.—It is generally conceded that population increase is to be desired in Canada both to ensure continued development of our resources and for the purposes of self-defence. The fact that any movement reduces natural rate of population increase must, consequently, be regarded as an undesirable feature of that movement. Are we, therefore, to suggest that industrialization and the specialization of our primary industries is a bad thing and that every one should be placed on a farm, there to live in comparative isolation? Such a plan would probably be very difficult to put into practice. It is necessary, however, to stress that a declining rate of natural increase is the unfortunate concomitant of the division of labour. It seems paradoxical that the very process by which production is so greatly increased is instrumental in lessening the increase of population. As life becomes more comfortable and human hardships are banished, an increasing emphasis is placed on the sacrifices which women must make to bear children. Regardless of other factors, an improvement in living conditions for the human race *per se* makes women more reluctant to undergo the travail and inconvenience of bearing child after child.

If the present downward trend in natural increase of population continues, there is a real possibility that actual stability or retrogression will be reached. In 1931 it appeared that Canadian women were doing slightly better than reproducing themselves, their husbands and their unmarried contemporaries. That they did so, however, was due largely to the contribution of a small proportion who had extremely large families. The disappearance of these large families can only result in cessation of natural increase. At present they are largely confined to the rural parts of certain provinces where changing social outlook may eventually result in their disappearance. Much has been written concerning the difficulty of procuring immigrants of suitable calibre. If Canada can depend neither on the prolificness of a section of her people nor on immigration for the desired increments in population, the responsibility for providing this increase must be assumed by the average Canadian woman. The reproductiveness of wage-earners, since they form so large a proportion of the gainfully occupied, is of particular importance.

It is not the purpose of this monograph to urge the adoption, either by governmental action or by individuals of their own free will, of schemes whereby the rate of population growth may be maintained or increased. It is necessary, however, to point out those developments which, on the basis of this study, it is believed would be favourable to a higher rate of natural increase.

There can be little doubt that persons moving from the city to the farm will tend to have larger families than if they remained in the city. The question may be raised as to whether there will be back-to-the-land movements of proportions large enough to appreciably raise the birth rate.

Wage-earners living in towns have larger families than those living in large cities. This is probably because living conditions for the worker are better in the town. There he does not need to live in crowded tenements. Besides, he may have a garden or even a small farm where he can raise much of his own food affording him a greater sense of security. This enhanced position of security may partly explain why his family is larger than that of his city cousin. *If industries were to locate in small towns rather than in large cities the families of their workers would tend to be larger.*

Lack of security amongst wage-earners must undoubtedly act as a check on the birth rate both by delaying the age of marriage and by encouraging family limitation. If the worker could feel reasonably sure of being able to support them at all times he might be willing to have more children. *It is quite possible that a national plan of unemployment insurance may tend to stimulate the birth rate.*

On several occasions in this monograph attention has been drawn to the penalties imposed on large families in cities, particularly those of wage-earners because of their fixed income. As a result, the large family is practically non-existent in the city. In European countries, such as Belgium, France and Italy, family allowances have been introduced. Professor Carr Saunders

in his book *World Population* defines family allowances as "payments in cash, apart from and in addition to wages to employees in proportion to the number of their dependent children." Propagandists advance the following arguments in their favour:—

(1) The principle of services rendered as a basis for remuneration is partly replaced by the needs principle.

(2) The total income of workers is more fairly distributed.

(3) The birth rate is increased.

(4) The more effective protection of children is ensured.

(5) A closer link is forged between employers and workers.

Family allowances were first introduced in France by employers of their own free will. They were made compulsory by legislation in Belgium in 1930 and in France in 1932. In both countries employers are required to pay into equalization funds out of which payments are made to workers. Though not set up by law, family allowances are general in Italy due to an agreement between the Fascist Confederation of Industry and the Fascist Confederation of Industrial Workers. The Italian scheme provides for the sharing of expense equally between employers and workers. Much is to be said in favour of family allowances from the point of view of social justice. Conclusive evidence as to their effect on the birth rate is not yet available. They were probably more badly needed in European countries than in Canada. Nevertheless we should carefully study their development and give serious consideration to their practicability here.

PART II

TABLE 1. Rural population, households and number of persons per household, Quebec, by counties, 1901 and 1921

County	Rural Population		Households		Persons per Rural Household		Variations in Size of Rural Household, 1901-21	
	1901	1921	1901	1921	1901	1921	Decrease	Increase
QUEBEC	996,011	1,038,096	181,572	180,882	5·49	5·74	–	0·25
Abitibi and Temiskaming	6,183	23,139	1,490	4,120	4·15	5·62	–	1·47
Argenteuil	13,657	13,007	2,493	2,463	5·48	5·28	0·20	–
Arthabaska	18,738	17,384	3,393	2,911	5·52	5·97	–	0·45
Bagot	16,335	13,210	3,292	2,403	4·96	5·50	–	0·54
Beauce	31,701	31,959	5,540	5,241	5·72	6·10	–	0·38
Beauharnois	8,701	6,027	1,591	1,047	5·47	5·76	–	0·29
Bellechasse	18,706	21,108	3,436	3,784	5·44	5·58	–	0·14
Berthier	18,147	16,649	3,418	3,038	5·31	5·48	–	0·17
Bonaventure	24,495	29,092	3,946	4,911	6·21	5·92	0·29	–
Brome	11,316	10,360	2,412	2,190	4·69	4·73	–	0·04
Chambly-Verchères	16,600	16,762	3,077	2,988	5·39	5·61	–	0·22
Champlain	28,074	27,407	4,991	4,355	5·62	6·29	–	0·67
Charlevoix	16,563	14,722	2,848	2,278	5·82	6·46	–	0·64
Chateauguay	12,742	10,198	2,487	2,012	5·12	5·07	0·05	–
Chicoutimi	12,023	14,182	1,829	2,117	6·57	6·70	–	0·13
Compton	16,287	15,312	3,268	2,903	4·98	5·27	–	0·29
Deux-Montagnes	12,133	11,957	2,288	2,104	5·30	5·68	–	0·38
Dorchester	20,697	26,388	3,906	4,464	5·30	5·91	–	0·61
Drummond	14,591	15,967	2,779	2,938	5·25	5·43	–	0·18
Frontenac	15,187	20,374	2,736	3,462	5·55	5·89	–	0·34
Gaspé	30,229	37,855	5,124	6,293	5·90	6·02	–	0·12
Hull	24,963	24,154	4,155	4,070	6·01	5·93	0·08	–
Huntingdon	12,519	11,428	2,489	2,515	5·03	4·54	0·49	–
Iberville	8,161	6,585	1,622	1,239	5·03	5·31	–	0·28
Joliette	18,035	16,800	3,473	3,074	5·19	5·47	–	0·28
Kamouraska	18,521	20,012	3,104	3,493	5·97	5·99	–	0·02
Labelle and Papineau	26,861	32,593	4,807	5,698	5·59	5·72	–	0·13
Lac-St-Jean	17,873	26,779	3,034	4,103	5·89	6·53	–	0·64
Laprairie	9,606	9,485	1,694	1,839	5·67	5·16	0·51	–
L'Assomption	11,456	11,032	2,272	2,192	5·04	5·03	0·01	–
Lévis	14,160	15,471	2,568	2,754	5·51	5·62	–	0·11
L'Islet	14,439	17,090	2,635	2,904	5·48	5·88	–	0·40
Lotbinière	18,301	17,199	3,306	2,894	5·54	5·94	–	0·40
Maskinongé	13,518	14,481	2,550	2,479	5·30	5·84	–	0·54
Matane	18,986	26,686	3,300	4,255	5·75	6·27	–	0·52
Mégantic	18,315	17,897	3,426	3,169	5·35	5·65	–	0·30
Missisquoi	11,185	10,117	2,371	2,079	4·72	4·87	–	0·15
Montcalm	13,001	11,090	2,589	2,125	5·02	5·22	–	0·20
Montmagny	12,838	17,852	2,375	3,223	5·41	5·54	–	0·13
Montmorency	12,091	11,507	2,143	1,965	5·64	5·86	–	0·22
Montreal and Jesus Islands	22,875	18,852	3,830	2,662	5·97	7·08	–	1·11
Napierville	6,722	6,118	1,232	1,132	5·46	5·40	0·06	–
Nicolet	24,014	24,247	4,308	4,319	5·57	5·61	–	0·04
Pontiac	18,443	16,223	3,115	3,043	5·92	5·33	0·59	–
Portneuf	25,591	21,741	4,672	3,685	5·48	5·90	–	0·42
Quebec	20,546	18,280	3,659	2,898	5·62	6·31	–	0·69
Richelieu	11,205	8,440	2,111	1,530	5·31	5·52	–	0·21
Richmond	11,215	12,221	2,253	2,231	4·98	5·48	–	0·50
Rimouski	17,075	19,324	2,798	2,981	6·10	6·48	–	0·38
Rouville	10,594	9,315	2,130	1,804	4·97	5·16	–	0·19
Saguenay	10,752	16,348	1,926	2,433	5·58	6·72	–	1·14
Shefford	16,550	14,960	3,218	2,964	5·14	5·05	0·09	–
Sherbrooke	5,541	5,309	1,076	1,078	5·15	4·92	0·23	–
Soulanges	7,796	6,797	1,422	1,211	5·48	5·61	–	0·13
Stanstead	10,201	9,789	2,233	2,025	4·57	4·83	–	0·26
St-Hyacinthe	11,162	9,352	2,254	1,907	4·95	4·90	0·05	–
St-Jean	6,976	5,930	1,366	1,149	5·11	5·16	–	0·05
St-Maurice	18,230	15,122	3,264	2,694	5·59	5·61	–	0·02
Témiscouata	24,027	33,756	3,829	5,502	6·28	6·14	0·14	–
Terrebonne	18,628	19,196	3,485	3,569	5·35	5·38	–	0·03
Vaudreuil	8,114	7,509	1,412	1,283	5·75	5·85	–	0·10
Wolfe	13,126	13,211	2,388	2,328	5·50	5·67	–	0·17
Yamaska	18,694	13,839	3,334	2,362	5·61	5·86	–	0·25

TABLE 2. Average number of persons per rural household, and number and percentage of rural population of French racial origin, Quebec, by counties, 1901 and 1921

County	Rural Households						Rural Population of French Origin			
	1901		1921		Variation		1901		1921	
	Size	Rank	Size	Rank	Increase	Decrease	No.	P.C.	No.	P.C.
QUEBEC	5·49	-	5·74	-	-	-	845,996	84·9	919,933	88·6
Chicoutimi	6·57	1	6·70	3	0·13	-	11,897	99·0	13,973	98·5
Témiscouata	6·28	2	6·14	10	-	0·14	23,545	98·0	33,144	98·2
Bonaventure	6·21	3	5·92	17	-	0·29	17,056	69·6	21,256	73·1
Rimouski	6·10	4	6·48	5	0·38	-	16,759	98·2	19,228	99·5
Hull	6·01	5	5·93	16	-	0·08	13,021	52·2	14,445	59·8
Kamouraska	5·97	5	5·99	13	0·02	-	18,461	99·7	20,785	99·4
Montreal and Jesus Islands	5·97	7	7·08	1	1·11	-	20,671	90·4	16,638	88·3
Pontiac	5·92	8	5·33	47	-	0·59	5,585	30·3	5,806	35·8
Gaspé	5·90	9	6·02	12	0·12	-	22,640	74·9	29,399	77·7
Lac-St-Jean	5·89	10	6·53	4	0·64	-	17,554	98·8	26,561	99·6
Charlevoix	5·82	11	6·46	6	0·64	-	16,348	98·7	14,611	99·2
Matane	5·75	12	6·27	9	0·52	-	17,973	94·7	26,411	99·0
Vaudreuil	5·75	13	5·85	24	0·10	-	7,505	92·5	6,958	92·7
Beauce	5·72	14	6·10	11	0·38	-	31,091	98·1	31,655	99·0
Laprairie	5·67	15	5·15	53	-	0·51	7,359	76·6	7,019	74·0
Montmorency	5·64	16	5·86	22	0·22	-	11,904	98·5	11,365	98·8
Champlain	5·62	17	5·29	8	0·67	-	27,062	96·4	26,601	97·1
Quebec	5·62	18	6·31	7	0·69	-	17,534	85·3	15,802	86·4
Yamaska	5·61	19	5·86	23	0·25	-	18,274	97·8	13,580	98·1
Labelle and Papineau	5·59	20	5·72	27	0·13	-	21,291	79·3	28,615	87·8
St-Maurice	5·59	21	5·61	34	0·02	-	17,719	97·2	14,908	98·6
Saguenay	5·58	22	6·72	2	1·14	-	8,530	79·3	11,028	67·5
Nicolet	5·57	23	5·61	35	0·04	-	23,583	98·2	23,946	98·8
Frontenac	5·55	24	5·89	20	0·34	-	13,463	88·5	19,471	95·6
Lotbinière	5·54	25	5·94	15	0·40	-	17,080	93·3	16,504	96·0
Arthabaska	5·53	26	5·97	14	0·45	-	18,106	96·6	17,042	98·0
Lévis	5·51	27	5·62	32	0·11	-	13,640	96·3	15,088	97·5
Wolfe	5·50	28	5·67	29	0·17	-	12,010	91·5	12,681	96·0
Argenteuil	5·48	29	5·28	49	-	0·20	5,920	43·3	5,521	50·1
L'Islet	5·48	30	5·88	21	0·40	-	14,413	99·8	16,924	99·0
Portneuf	5·48	31	5·90	19	0·42	-	24,131	94·3	20,785	95·6
Soulanges	5·48	32	5·61	35	0·13	-	7,333	94·1	6,263	92·1
Beauharnois	5·47	33	5·76	26	0·29	-	8,113	93·2	5,739	95·2
Napierville	5·46	34	5·40	45	-	0·06	6,377	94·9	5,979	97·7
Bellechasse	5·44	35	5·58	37	0·14	-	18,640	99·5	21,077	99·9
Montmagny	5·41	36	5·54	38	0·13	-	12,776	99·5	17,730	99·3
Chambly-Verchères	5·39	37	5·51	33	0·22	-	15,933	96·0	14,754	88·0
Mégantic	5·35	38	5·55	30	0·30	-	13,722	74·9	15,294	85·5
Terrebonne	5·35	39	5·38	46	0·03	-	17,575	94·9	17,690	92·2
Berthier	5·31	40	5·48	41	0·17	-	17,938	98·8	16,475	99·0
Richelieu	5·31	41	5·52	39	0·21	-	11,147	99·5	8,315	98·5
Deux-Montagnes	5·30	42	5·68	28	0·38	-	9,120	75·2	11,119	93·0
Dorchester	5·30	43	5·91	18	0·51	-	17,821	86·1	25,124	95·2
Maskinongé	5·30	44	5·84	25	0·54	-	13,297	98·4	14,426	99·0
Drummond	5·25	45	5·43	44	0·18	-	12,073	82·7	14,895	93·3
Joliette	5·19	46	5·47	43	0·28	-	17,590	97·5	16,435	97·8
Sherbrooke	5·15	47	4·92	58	-	0·23	2,860	51·6	3,294	52·0
Shefford	5·14	48	5·05	55	-	0·09	12,969	78·4	13,248	88·6
Chateauguay	5·12	49	5·07	55	-	0·05	8,701	68·3	8,017	78·6
St-Jean	5·11	50	5·16	54	0·05	-	5,942	85·2	5,313	89·6
L'Assomption	5·04	51	5·03	57	-	0·01	11,140	07·2	10,598	96·1
Huntingdon	5·03	52	4·54	53	-	0·49	4,628	37·0	5,155	45·1
Iberville	5·03	53	5·31	48	0·28	-	7,794	95·5	6,390	97·0
Montcalm	5·02	54	5·22	51	0·20	-	12,020	92·5	10,417	93·9
Compton	4·98	55	5·27	50	0·29	-	8,165	50·1	10,158	66·3
Richmond	4·98	56	5·48	42	0·50	-	7,158	53·8	9,469	77·5
Rouville	4·97	57	5·16	52	0·19	-	10,183	96·1	8,889	95·4
Bagot	4·96	58	5·50	40	0·54	-	16,162	98·0	13,097	99·1
St-Hyacinthe	4·95	59	4·90	59	-	0·05	11,125	99·7	9,347	99·9
Missisquoi	4·72	60	4·87	60	0·15	-	5,412	48·4	6,708	66·3
Brome	4·69	61	4·73	62	0·04	-	3,831	33·9	4,776	46·1
Stanstead	4·57	62	4·83	51	0·26	-	3,748	36·7	5,467	55·8
Abitibi and Temiskaming	4·15	63	5·62	31	1·47	-	2,356	38·1	19,422	83·9

TABLE 3. Ordinary households occupying stated number of rooms, by number of persons in household, City of Montreal, 1931

Persons in Household	Households Occupying the Following Number of Rooms															
	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 and over
TOTAL...	**170,691**	**3,321**	**4,352**	**12,844**	**33,436**	**39,176**	**34,433**	**24,435**	**11,183**	**3,589**	**1,740**	**535**	**634**	**195**	**257**	**564**
1.....	6,933	1,764	1,164	1,203	1,259	838	347	165	96	37	24	9	11	2	5	0
2.....	28,958	1,064	1,678	4,243	8,281	7,270	3,696	1,731	646	158	84	23	39	8	14	23
3.....	31,160	300	811	3,099	7,642	8,480	5,843	3,155	1,135	327	173	60	60	11	25	39
4.....	28,678	106	380	1,878	5,803	7,290	6,509	4,228	1,604	455	198	61	62	22	26	56
5.....	23,450	46	170	1,151	3,984	5,448	5,740	4,170	1,705	525	240	62	85	20	31	73
6.....	17,284	18	76	605	2,697	3,703	4,117	3,435	1,636	505	234	66	79	22	22	69
7.....	12,431	9	44	331	1,673	2,508	3,070	2,609	1,314	421	214	59	68	20	26	65
8.....	8,426	6	15	158	1,027	1,569	2,061	1,831	1,016	347	157	61	65	21	30	62
9.....	5,516	3	7	98	550	967	1,340	1,254	748	275	109	36	43	18	16	52
10.....	3,549	1	4	43	292	558	795	878	533	199	111	36	25	17	15	42
11.....	2,019	4	2	20	131	300	485	455	324	133	65	29	32	7	16	16
12.....	1,130	–	1	8	55	143	227	267	239	80	47	14	12	11	10	16
13.....	605	–	–	5	29	49	123	148	104	50	41	8	16	7	8	17
14.....	302	–	–	1	7	31	50	75	44	37	21	3	17	4	3	9
15.....	142	–	–	1	5	12	20	23	27	23	9	5	8	2	3	4
16.....	73	–	–	–	1	8	7	10	8	13	9	2	8	1	2	4
17.....	25	–	–	–	–	2	1	1	1	3	3	–	3	2	4	5
18.....	11	–	–	–	–	–	2	–	3	1	1	–	1	–	1	2
19 and over	2	–	–	–	–	–	–	–	–	–	–	1	–	–	–	1

TABLE 4. Ordinary households occupying stated number of rooms, by number of persons in household, City of Toronto, 1931

Persons in Household	Households Occupying the Following Number of Rooms															
	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 and over
TOTAL...	**149,367**	**2,093**	**7,020**	**15,642**	**14,686**	**18,444**	**48,022**	**15,313**	**14,727**	**6,297**	**3,623**	**1,231**	**1,133**	**331**	**341**	**464**
1.....	5,704	947	1,020	1,248	668	505	634	208	238	102	71	19	21	6	6	11
2.....	28,703	710	2,902	5,774	4,156	4,088	6,408	1,926	1,575	603	318	89	75	19	23	28
3.....	32,711	329	1,880	4,498	3,833	4,646	10,036	2,956	2,489	1,053	522	190	155	38	48	38
4.....	29,550	66	773	2,354	2,900	3,913	10,968	3,385	2,908	1,153	614	185	186	50	44	51
5.....	21,600	16	285	1,039	1,618	2,556	8,560	2,684	2,566	1,114	625	214	165	51	50	57
6.....	13,538	15	81	459	802	1,346	5,352	1,813	1,919	832	478	146	135	45	50	65
7.....	7,954	1	45	150	407	744	2,960	1,073	1,279	588	322	119	141	34	34	57
8.....	4,358	–	15	55	176	352	1,581	593	778	337	232	74	73	24	25	43
9.....	2,399	–	15	31	68	167	812	317	431	214	167	61	45	17	17	37
10.....	1,296	–	2	20	33	73	388	174	249	120	108	38	40	16	11	24
11.....	733	–	2	12	11	35	183	96	157	78	69	25	28	7	14	16
12.....	380	–	–	2	8	15	80	38	84	42	39	23	24	9	3	13
13.....	188	–	–	–	4	2	30	31	24	31	18	15	13	7	5	8
14.....	105	–	–	–	2	1	17	12	19	13	12	11	10	3	3	2
15.....	62	–	–	–	–	1	7	4	6	8	10	13	5	1	3	4
16.....	35	–	–	–	–	–	2	2	5	2	10	2	8	–	1	3
17.....	18	–	–	–	–	–	3	–	–	2	1	2	5	1	–	4
18.....	11	–	–	–	–	–	1	1	–	2	2	3	1	1	–	–
19 and over	22	–	–	–	–	–	–	–	–	3	5	2	3	2	4	3

TABLE 5. Ordinary households occupying stated number of rooms, by number of persons in household, City of Winnipeg, 1931

Persons in Household	Households Occupying the Following Number of Rooms															
	Total	1	2	3'	4	5	6	7	8	9	10	11	12	13	14	15 and over
TOTAL...	**48,210**	**1,818**	**3,334**	**6,126**	**6,667**	**9,786**	**8,887**	**5,211**	**2,848**	**1,551**	**1,025**	**387**	**327**	**79**	**68**	**96**
1.....	1,882	765	417	318	152	101	64	27	13	9	6	5	4	–	–	1
2.....	8,036	580	1,237	1,850	1,510	1,333	871	358	142	68	44	17	19	–	1	6
3.....	9,511	309	926	1,718	1,692	2,073	1,465	666	328	176	93	35	17	5	3	5
4.....	9,365	95	455	1,131	1,485	2,310	2,021	964	447	220	127	44	38	11	8	9
5.....	7,285	42	193	574	898	1,767	1,675	1,043	548	271	147	63	37	13	8	6
6.....	4,903	12	67	291	475	1,031	1,189	785	467	274	166	57	59	8	10	12
7.....	2,933	6	26	130	241	579	721	561	314	171	130	41	38	9	8	8
8.....	1,765	2	7	64	119	312	425	329	220	119	90	25	26	9	5	13
9.....	1,003	1	3	26	48	144	224	220	128	81	62	29	18	4	3	12
10.....	623	3	1	14	24	75	117	112	109	59	55	19	25	1	6	3
11.....	365	2	1	6	13	37	65	65	52	42	37	14	13	5	9	4
12.....	200	1	–	2	8	15	27	42	35	24	21	10	10	2	1	2
13.....	114	–	–	2	1	4	15	16	19	13	18	10	6	3	2	5
14.....	68	–	–	–	–	4	4	12	10	6	16	8	1	5	1	1
15.....	41	–	1	–	1	1	3	8	6	6	4	1	5	2	2	1
16.....	20	–	–	–	–	–	–	2	7	3	2	2	2	–	1	1
17.....	17	–	–	–	–	–	–	1	1	5	3	4	2	–	–	1
18.....	12	–	–	–	–	–	–	–	2	2	2	1	3	1	–	1
19 and over	17	–	–	–	–	–	1	–	–	2	2	2	4	1	–	5

TABLE 6. Ordinary households classified according to average number of rooms per person and number of persons, City of Toronto, 1931

Rooms per Person	Households with Given Accommodation		Households with Given Accommodation or less		Rooms per Person	Households with Given Accommodation		Households with Given Accommodation or less	
	Number	Persons	Number	Persons		Number	Persons	Number	Persons
0·14	1	7	1	7	1·36	3	33	67,459	356,845
0·17	15	90	16	97	1·38	74	592	67,533	357,437
0·18	2	22	18	119	1·40	2,695	13,530	70,228	370,967
0·20	18	100	36	219	1·42	1	12	70,229	370,979
0·22	15	135	51	354	1·43	322	2,254	70,551	373,233
0·25	83	408	134	762	1·44	17	153	70,568	373,386
0·27	12	132	146	894	1·45	3	33	70,571	373,419
0·29	47	343	193	1,237	1·50	17,654	61,078	88,225	434,497
0·30	20	200	213	1,437	1·54	1	13	88,226	434,510
0·31	4	52	217	1,489	1·55	3	33	88,229	434,543
0·33	451	1,881	668	3,370	1·56	17	153	88,246	434,696
0·35	3	51	671	3,421	1·57	119	833	88,365	435,529
0·36	12	135	683	3,556	1·60	2,570	12,870	90,935	448,399
0·38	59	498	742	4,054	1·63	24	192	90,959	448,591
0·39	1	18	743	4,072	1·64	1	11	90,960	448,602
0·40	325	1,860	1,068	5,932	1·67	5,135	16,911	96,095	465,513
0·41	1	22	1,069	5,954	1·70	4	40	96,099	465,553
0·42	15	180	1,084	6,134	1·71	141	987	96,240	466,540
0·43	168	1,309	1,252	7,443	1·73	2	26	96,242	466,566
0·44	70	644	1,322	8,087	1·75	3,410	13,740	99,652	480,306
0·45	35	385	1,357	8,472	1·77	1	13	99,653	480,319
0·46	30	390	1,387	8,862	1·78	9	81	99,662	480,400
0·47	5	79	1,392	8,941	1·80	1,117	5,600	100,779	486,000
0·50	2,302	10,726	3,694	19,667	1·82	3	33	100,782	486,033
0·52	1	21	3,695	19,688	1·83	146	876	100,928	486,909
0·53	10	162	3,705	19,850	1·85	1	13	100,929	486,922
0·54	31	403	3,736	20,253	1·86	34	238	100,963	487,160
0·55	183	2,013	3,919	22,266	1·88	14	112	100,977	487,272
0·56	171	1,571	4,090	23,837	1·89	3	27	100,980	487,299
0·57	428	3,157	4,518	26,994	1·90	2	20	100,982	487,319
0·58	39	475	4,557	27,469	2·00	18,933	55,407	110,915	542,726
0·59	2	39	4,559	27,508	2·13	6	56	119,921	542,782
0·60	1,436	9,215	5,995	36,723	2·14	19	133	119,940	542,915
0·61	4	77	5,999	36,800	2·17	46	282	119,986	543,197
0·62	24	312	6,023	37,112	2·18	1	11	119,987	543,208
0·63	362	2,976	6,385	40,088	2·20	215	1,080	120,202	544,288
0·64	109	1,238	6,494	41,326	2·22	1	9	120,203	544,297
0·65	2	34	6,496	41,360	2·23	1	13	120,204	544,310
0·67	3,589	18,936	10,085	60,296	2·25	1,157	4,644	121,361	548,954
0·68	1	19	10,086	60,315	2·29	11	77	121,372	549,031
0·69	33	435	10,119	60,750	2·33	3,008	9,186	124,380	558,217
0·70	175	1,760	10,294	62,510	2·38	2	16	124,382	558,233
0·71	761	5,461	11,055	67,971	2·40	166	835	124,548	559,068
0·72	2	47	11,057	68,018	2·43	5	35	124,553	559,103
0·73	170	1,922	11,227	69,940	2·44	2	18	124,555	559,121
0·74	2	38	11,229	69,978	2·45	1	11	124,556	559,132
0·75	3,985	22,696	15,214	92,674	2·50	4,732	10,816	129,288	569,948
0·76	1	17	15,215	92,691	2·57	7	49	129,295	569,997
0·77	18	234	15,233	92,925	2·60	51	255	129,346	570,252
0·78	317	2,853	15,550	95,778	2·63	1	8	129,347	570,260
0·79	12	173	15,562	95,951	2·67	2,498	7,521	131,845	577,781
0·80	1,872	10,655	17,434	106,606	2·70	1	10	131,846	577,791
0·82	78	858	17,512	107,464	2·71	2	14	131,848	577,805
0·83	1,385	8,544	18,897	116,008	2·75	186	748	132,034	578,553
0·85	15	195	18,912	116,203	2·78	2	18	132,036	578,571
0·86	2,970	20,860	21,882	137,063	2·80	50	250	132,086	578,821
0·87	1	15	21,883	137,078	2·83	3	18	132,089	578,839
0·88	594	4,760	22,477	141,838	2·86	5	35	132,094	578,874
0·89	431	3,879	22,908	145,717	2·88	1	8	132,095	578,882
0·90	120	1,200	23,028	146,917	2·89	2	18	132,097	578,900
0·91	69	759	23,097	147,676	3·00	8,922	18,117	141,019	597,017
0·92	36	445	23,133	148,121	3·14	1	7	141,020	597,024
0·93	6	87	23,139	148,208	3·17	3	18	141,023	597,042
0·94	3	51	23,142	148,259	3·20	15	75	141,038	597,117
1·00	21,387	94,174	44,529	242,433	3·25	50	200	141,088	597,317
1·06	1	17	44,530	242,450	3·33	528	1,602	141,616	598,919
1·07	2	29	44,532	242,479	3·38	1	8	141,617	598,927
1·08	14	173	44,546	242,652	3·40	10	50	141,627	598,977
1·09	28	308	44,574	242,960	3·43	3	21	141,630	598,998
1·10	38	380	44,612	243,340	3·50	1,971	4,034	143,601	603,032
1·11	167	1,503	44,779	244,843	3·57	1	7	143,602	603,039
1·13	338	2,712	45,117	247,555	3·60	9	45	143,611	603,084
1·14	1,279	8,953	46,396	256,508	3·67	191	576	143,802	603,660
1·15	1	13	46,397	256,521	3·75	18	72	143,820	603,732
1·17	1,816	10,914	48,213	267,435	3·80	2	10	143,822	603,742
1·18	7	77	48,220	267,512	3·83	1	6	143,823	603,748
1·20	8,602	43,230	56,822	310,742	3·86	1	7	143,824	603,755
1·22	61	549	56,883	311,291	4·00	2,416	4,364	146,240	608,119
1·23	3	39	56,886	311,330	4·15	603	1,206	140,843	009,325
1·25	4,148	17,544	61,034	328,874	4·17	1	6	146,844	609,331
1·27	14	154	61,048	329,028	4·25	4	16	146,848	609,347
1·29	589	4,130	61,637	333,158	4·33	40	126	146,888	009,473
1·30	16	160	61,653	333,318	4·40	2	10	146,890	609,483
1·31	1	16	61,654	333,334	4·44	1	9	146,891	609,492
1·33	5,802	23,478	67,456	356,812	4·50	6	26	146,897	609,518

TABLE 6. Ordinary households classified according to average number of rooms per person and number of persons, City of Toronto, 1931—Con.

Rooms per Person	Households with Given Accommodation		Households with Given Accommodation or less		Rooms per Person	Households with Given Accommodation		Households with Given Accommodation or less	
	Number	Persons	Number	Persons		Number	Persons	Number	Persons
4·67	48	144	146,945	609,662	8·50	2	4	149,122	612,491
4·75	1	4	146,946	609,666	9·00	104	107	149,226	612,598
5·00	846	1,217	147,792	610,883	9·33	1	3	149,227	612,601
5·33	10	30	147,802	610,913	9·50	1	2	149,228	612,603
5·50	90	182	147,892	611,095	10·00	73	75	149,301	612,678
5·67	2	6	147,894	611,101	11·00	22	25	149,323	612,703
6·00	710	787	148,604	611,888	12·00	21	21	149,344	612,724
6·25	2	8	148,606	611,896	13·00	6	6	149,350	612,730
6·33	1	3	148,607	611,899	14·00	6	6	149,356	612,736
6·60	20	42	148,627	611,941	15·00	7	7	149,363	612,743
6·67	2	6	148,629	611,947	16·00	1	1	149,364	612,744
7·00	232	257	148,861	612,204	20·00	2	2	149,366	612,746
7·50	15	32	148,876	612,236	21·00	1	1	149,367	612,747
8·00	244	251	149,120	612,487					

TABLE 7. Data used in the correlation between average number of lodgers per household and related factors for urban households of one family, with wage-earner heads, consisting of husband and wife or more persons living in rented homes, by rental groups, cities of 30,000 population and over and urban by size groups, Canada, by provinces, 1931

Monthly Rental	X_1 Average No. of Lodgers per House-hold	X_2 Average Monthly Rent per Room in Cents	X_3 Average No. of Children per House-hold	X_4 Average No. of Persons per Room[1]	X_5 Monthly Earnings per Person[2]
		c.			$
Prince Edward Island—					
Urban 1,000-30,000—					
$10-$15	0·30	220	2·8	0·83	17
16- 24	0·30	290	2·7	0·68	25
25- 39	0·50	410	2·2	0·56	36
40- 59	0·24	700	1·2	0·49	60
Urban under 1,000—					
$10-$15	0·27	190	2·4	0·64	21
Nova Scotia—					
Halifax—					
$10-$15	0·15	380	2·4	1·30	16
16- 24	0·21	490	2·5	1·10	19
25- 39	0·25	610	2·4	0·85	27
40- 59	0·38	810	1·8	0·64	47
Urban 1,000-30,000—					
$10-$15	0·18	240	2·9	0·93	16
16- 24	0·22	350	2·6	0·79	23
25- 39	0·29	470	2·3	0·64	33
40- 59	0·28	660	1·9	0·55	54
Urban under 1,000—					
$10-$15	0·13	200	2·1	0·66	18
16- 24	0·20	270	1·7	0·50	33
25- 39	0·19	390	1·9	0·40	43
New Brunswick—					
Saint John—					
$10-$15	0·14	260	2·5	0·92	16
16- 24	0·16	350	2·3	0·75	24
25- 39	0·22	600	2·0	0·64	37
40- 59	0·33	770	1·3	0·54	61
Urban 1,000-30,000—					
$10-$15	0·14	240	2·6	0·86	17
16- 24	0·21	340	2·7	0·79	22
26- 39	0·27	470	2·4	0·66	33
40- 59	0·47	660	1·8	0·54	61
Urban under 1,000—					
$10-$16	0·16	170	2·0	0·55	19
16- 24	0·23	240	1·5	0·40	38
Quebec—					
Montreal—					
$10-$15	0·18	330	2·1	1·07	17
16- 24	0·06	430	2·5	1·02	23
25- 39	0·30	540	2·8	0·80	31
40- 59	0·31	860	1·7	0·67	47

[1]Lodgers not included in calculnting avernge persons per room.
[2]Does not include lodgers or their earnings.

TABLE 7. Data used in the correlation between average number of lodgers per household and related factors for urban households of one family, with wage-earner heads, consisting of husband and wife or more persons living in rented homes, by rental groups, cities of 30,000 population and over and urban by size groups, Canada, by provinces, 1931—Con.

Monthly Rental	X_1 Average No. of Lodgers per House-hold	X_2 Average Monthly Rent per Room in Cents	X_3 Average No. of Children per House-hold	X_4 Average No. of Persons per Room[1]	X_5 Monthly Earnings per Person[2]
		c.			$
Quebec—Con.					
Quebec City—					
$10–$15	0·13	350	2·7	1·26	16
16– 24	0·16	440	3·1	1·11	25
25– 39	0·21	550	3·3	0·92	26
40– 59	0·28	730	2·7	0·71	39
Verdun—					
$10–$15	0·09	350	1·8	1·05	20
16– 24	0·14	470	2·0	0·93	25
25– 39	0·16	630	2·1	0·82	31
40– 59	0·25	830	2·3	0·73	53
Trois-Rivières—					
$10–$15	0·10	300	2·9	1·16	14
16– 24	0·16	400	3·3	1·05	19
25– 39	0·20	520	3·3	0·88	30
40– 59	0·16	740	2·4	0·70	49
Urban 1,000-30,000—					
$10–$15	0·15	270	3·0	1·05	15
16– 24	0·22	360	3·1	0·92	22
25– 39	0·29	510	2·6	0·74	35
40– 59	0·20	750	2·0	0·62	56
Urban under 1,000—					
$10–$15	0·17	230	2·8	0·85	19
16– 24	0·16	310	2·5	0·71	28
25– 39	0·29	450	2·1	0·58	40
40– 59	0·16	680	1·7	0·54	66
Ontario—					
Toronto—					
$10–$15	0·25	450	1·3	1·14	20
16– 24	0·24	530	1·7	0·97	22
25– 39	0·34	640	1·9	0·78	25
40– 59	0·37	890	1·6	0·65	41
Hamilton—					
$10–$15	0·18	360	1·6	1·01	17
16– 24	0·30	410	2·1	0·82	19
25– 39	0·35	580	1·9	0·72	28
40– 59	0·22	890	1·3	0·61	54
Ottawa—					
$10–$15	0·18	320	2·4	1·10	16
16– 24	0·21	370	2·7	0·86	21
25– 39	0·27	520	2·4	0·71	32
40– 59	0·32	750	1·7	0·57	52
London—					
$10–$15	0·18	290	1·9	0·88	17
16– 24	0·22	380	2·0	0·74	21
25– 39	0·26	530	1·8	0·63	33
40– 59	0·27	760	1·3	0·53	55
Windsor—					
$10–$15	0·21	390	1·5	1·05	14
16– 24	0·19	490	1·9	0·94	15
25– 39	0·28	630	2·0	0·78	24
40– 59	0·28	910	1·5	0·65	44
Kitchener—					
$10–$15	0·17	430	1·4	1·14	18
16– 24	0·22	470	2·0	0·92	20
25– 39	0·32	590	2·0	0·74	28
40– 59	0·32	810	1·5	0·58	56
Brantford—					
$10–$15	0·22	280	2·0	0·88	14
16– 24	0·22	360	2·0	0·72	18
25– 39	0·23	520	1·9	0·62	32
40– 59	0·20	680	1·6	0·52	60
Urban 1,000-30,000—					
$10–$15	0·17	260	2·1	0·84	18
16– 24	0·23	370	2·1	0·75	23
25– 39	0·26	530	1·9	0·65	34
40– 59	0·25	280	1·5	0·20	57
Urban under 1,000—					
$10–$15	0·14	210	2·1	0·67	22
16– 24	0·16	310	1·9	0·61	32
25– 39	0·14	450	2·1	0·58	42
40– 59	0·25	750	1·8	6·50	54

TABLE 7. Data used in the correlation between average number of lodgers per household and related factors for urban households of one family, with wage-earner heads, consisting of husband and wife or more persons living in rented homes, by rental groups, cities of 30,000 population and over and urban by size groups, Canada, by provinces, 1931—Con.

Monthly Rental	X_1 Average No. of Lodgers per House-hold	X_2 Average Monthly Rent per Room in Cents	X_3 Average No. of Children per House-hold	X_4 Average No. of Persons per Room[1]	X_5 Monthly Earnings per Person[2]
		c.			$
Manitoba—					
Winnipeg—					
$10–$15	0·28	470	1·5	1·30	15
16– 24	0·33	530	2·1	1·07	18
25– 39	0·38	690	2·1	0·88	28
40– 59	0·44	1,030	1·5	0·73	45
Urban 1,000-30,000—					
$10–$15	0·15	290	2·5	1·00	16
16– 24	0·21	410	2·3	0·86	24
25– 39	0·22	580	2·3	0·78	32
40– 59	0·18	840	1·8	0·67	53
Urban under 1,000—					
$10–$15	0·17	240	2·2	0·80	21
16– 24	0·22	310	2·0	0·65	35
25– 39	0·19	470	2·1	0·60	44
Saskatchewan—					
Regina—					
$10–$15	0·18	540	1·7	1·53	13
16– 24	0·26	590	1·9	1·13	19
25– 39	0·31	740	2·0	0·94	28
40– 59	0·45	990	1·6	0·74	45
Saskatoon—					
$10–$15	0·18	400	2·0	1·26	15
16– 24	0·24	500	2·1	1·00	20
25– 39	0·32	700	2·0	0·87	28
40– 59	0·46	910	1·8	0·71	46
Urban 1,000-30,000—					
$10–$15	0·15	340	2·3	1·13	16
16– 24	0·17	450	2·1	0·90	26
25– 39	0·26	590	2·0	0·75	35
40– 59	0·33	870	1·6	0·65	52
Urban under 1,000—					
$10–$15	0·15	280	2·3	0·95	22
16– 24	0·21	380	2·1	0·77	32
25– 39	0·32	530	1·9	0·66	47
Alberta—					
Calgary—					
$10–$15	0·20	490	1·5	1·32	17
16– 24	0·19	670	1·6	1·16	21
25– 39	0·26	740	1·8	0·86	31
40– 59	0·34	950	1·5	0·68	49
Edmonton—					
$10–$15	0·13	400	1·9	1·22	17
16– 24	0·19	570	1·8	1·05	23
25– 39	0·28	660	1·8	0·80	33
40– 59	0·29	870	1·6	0·66	51
Urban 1,000-30,000—					
$10–$15	0·14	310	2·2	1·03	19
16– 24	0·16	420	2·0	0·82	29
25– 39	0·20	600	1·8	0·71	40
40– 59	0·40	840	1·7	0·63	56
Urban under 1,000—					
$10–$15	0·14	300	2·1	0·95	26
16– 24	0·16	390	1·9	0·77	40
25– 39	0·21	550	1·8	0·67	49
British Columbia—					
Vancouver—					
$10–$15	0·16	400	1·6	1·12	16
16– 24	0·20	510	1·7	0·92	21
25– 39	0·25	690	1·7	0·79	32
40– 59	0·31	1,010	1·2	0·67	54
Victoria—					
$10–$15	0·10	290	1·8	0·84	20
16– 24	0·14	410	1·8	0·77	27
25– 39	0·14	600	1·6	0·68	36
40– 59	0·27	1,890	1·2	0·60	46
Urban 1,000-30,000—					
$10–$15	0·12	310	1·9	0·94	20
16– 24	0·15	430	1·9	0·82	29
25– 39	0·26	610	1·7	0·70	42
40– 59	0·48	930	1·3	0·63	64
Urban under 1,000—					
$10–$15	0·07	280	2·1	0·90	22
16– 24	0·17	390	1·9	0·74	32
25– 39	0·19	590	1·5	0·66	43

TABLE 8. Private families of two or more persons, showing average number per family of persons, own children, guardianship children and other dependents, by age of head, rural and urban by size groups, Canada and provinces, 1931

No.	Age of Head	Total				Rural			
		Persons	Children	Guardian-ship Children	Other Depend-ents	Persons	Children	Guardian-ship Children	Other Depend-ents
1	**CANADA**	4·22	2·27	0·039	0·049	4·53	2·55	0·049	0·054
2	Under 25	2·76	0·80	0·048	0·026	2·81	0·84	0·066	0·033
3	25–34	3·74	1·74	0·023	0·034	3·97	1·96	0·029	0·038
4	35–44	4·90	2·91	0·023	0·050	5·37	3·36	0·028	0·056
5	45–54	4·92	2·97	0·034	0·054	5·41	3·42	0·042	0·062
6	55 and over	3·48	1·59	0·071	0·056	3·66	1·74	0·085	0·060
7	**Prince Edward Island**	4·30	2·28	0·077	0·129	4·36	2·32	0·082	0·145
8	Under 25	2·91	0·94	0·046	0·089	2·89	0·93	0·048	0·114
9	25–34	3·90	1·86	0·032	0·102	3·92	1·86	0·032	0·119
10	35–44	5·26	3·18	0·040	0·158	5·35	3·23	0·045	0·183
11	45–54	5·16	3·10	0·072	0·162	5·29	3·20	0·075	0·183
12	55 and over	3·56	1·60	0·122	0·108	3·61	1·62	0·126	0·117
13	**Nova Scotia**	4·30	2·32	0·073	0·082	4·33	2·32	0·089	0·098
14	Under 25	2·88	0·96	0·041	0·032	2·90	0·98	0·043	0·041
15	25–34	3·96	1·96	0·036	0·053	4·08	2·06	0·042	0·067
16	35–44	5·11	3·11	0·035	0·088	5·25	3·22	0·039	0·111
17	45–54	5·16	3·16	0·067	0·096	5·30	3·26	0·078	0·122
18	55 and over	3·51	1·57	0·125	0·087	3·52	1·54	0·142	0·095
19	**New Brunswick**	4·55	2·56	0·063	0·080	4·78	2·76	0·074	0·087
20	Under 25	2·93	0·96	0·054	0·037	2·96	0·99	0·068	0·045
21	25–34	4·12	2·10	0·037	0·057	4·31	2·26	0·043	0·065
22	35–44	5·49	3·46	0·037	0·090	5·88	3·82	0·042	0·103
23	45–54	5·48	3·47	0·059	0·097	5·86	3·82	0·069	0·108
24	55 and over	3·64	1·71	0·103	0·079	3·76	1·79	0·118	0·079
25	**Quebec**	4·79	2·83	0·044	0·050	5·42	3·43	0·060	0·051
26	Under 25	2·81	0·79	0·050	0·032	2·84	0·81	0·080	0·034
27	25–34	4·08	2·05	0·027	0·036	4·55	2·51	0·038	0·035
28	35–44	5·69	3·69	0·030	0·055	6·82	4·79	0·043	0·057
29	45–54	5·85	3·90	0·042	0·059	6·98	4·99	0·057	0·065
30	55 and over	3·87	2·01	0·074	0·052	4·12	2·21	0·091	0·049
31	**Ontario**	3·82	1·88	0·032	0·051	4·02	2·05	0·039	0·062
32	Under 25	2·73	0·78	0·030	0·019	2·78	0·82	0·039	0·027
33	25–34	3·51	1·52	0·016	0·031	3·69	1·68	0·019	0·037
34	35–44	4·40	2·43	0·017	0·049	4·74	2·73	0·021	0·058
35	45–54	4·37	2·42	0·028	0·058	4·68	2·70	0·032	0·072
36	55 and over	3·17	1·29	0·060	0·066	3·31	1·40	0·068	0·077
37	**Manitoba**	4·26	2·32	0·035	0·037	4·61	2·65	0·042	0·037
38	Under 25	2·67	0·74	0·057	0·021	2·74	0·79	0·081	0·026
39	25–34	3·57	1·58	0·025	0·032	3·85	1·85	0·029	0·036
40	35–44	4·78	2·80	0·020	0·044	5·25	3·26	0·021	0·045
41	45–54	4·93	2·99	0·029	0·039	5·46	3·50	0·038	0·038
42	55 and over	3·67	1·79	0·063	0·031	3·90	2·00	0·076	0·028
43	**Saskatchewan**	4·54	2·58	0·038	0·030	4·81	2·84	0·040	0·032
44	Under 25	2·76	0·80	0·095	0·028	2·79	0·82	0·100	0·033
45	25–34	3·76	1·77	0·029	0·028	3·91	1·91	0·030	0·032
46	35–44	5·15	3·16	0·024	0·033	5·49	3·49	0·025	0·035
47	46–54	5·26	3·31	0·028	0·032	5·65	3·69	0·029	0·033
48	55 and over	3·77	1·88	0·069	0·024	4·02	2·12	0·070	0·026
49	**Alberta**	4·23	2·28	0·034	0·030	4·49	2·53	0·037	0·032
50	Under 25	2·69	0·74	0·070	0·032	2·72	0·77	0·070	0·041
51	25–34	3·61	1·62	0·024	0·027	3·78	1·78	0·026	0·031
52	35–44	4·75	2·77	0·021	0·033	5·11	3·12	0·023	0·036
53	45–54	4·83	2·89	0·028	0·033	5·24	3·29	0·030	0·033
54	55 and over	3·57	1·69	0·065	0·025	3·80	1·91	0·071	0·023
55	**British Columbia**	3·65	1·73	0·030	0·031	3·77	1·83	0·039	0·032
56	Under 25	2·68	0·77	0·055	0·016	2·77	0·86	0·074	0·019
57	25–34	3·33	1·36	0·019	0·024	3·51	1·54	0·023	0·024
58	35–44	4·07	2·12	0·017	0·033	4·27	2·31	0·022	0·032
59	45–54	4·03	2·11	0·023	0·033	4·17	2·23	0·030	0·034
60	55 and over	3·13	1·25	0·054	0·034	3·17	1·24	0·072	0·036

TABLE 8. Private families of two or more persons, showing average number per family of persons, own children, guardianship children and other dependents, by age of head, rural and urban by size groups, Canada and provinces, 1931

Urban 30,000 and over				Urban 1,000–30,000				Urban under 1,000				No.
Persons	Children	Guardian-ship Children	Other Depend-ents	Persons	Chil-dren	Guardian-ship Children	Other Depend-ents	Persons	Chil-dren	Guardian-ship Children	Other Depend-ents	
3·87	1·95	0·025	0·044	4·14	2·19	0·038	0·045	4·11	2·16	0·051	0·044	1
2·67	0·71	0·028	0·022	2·80	0·84	0·036	0·018	2·77	0·83	0·076	0·021	2
3·41	1·42	0·016	0·032	3·75	1·76	0·021	0·029	3·84	1·85	0·032	0·028	3
4·32	2·36	0·016	0·047	4·83	2·85	0·022	0·045	4·99	3·02	0·028	0·039	4
4·37	2·46	0·023	0·047	4·80	2·86	0·035	0·051	4·83	2·88	0·042	0·047	5
3·34	1·53	0·044	0·049	3·32	1·44	0·069	0·057	3·12	1·21	0·086	0·055	6
–	–	–	–	4·12	2·19	0·056	0·075	4·04	2·06	0·096	0·087	7
–	–	–	–	2·96	1·00	0·043	0·036	2·88	0·92	0·042	–	8
–	–	–	–	3·83	1·85	0·022	0·047	3·88	1·80	0·078	0·088	9
–	–	–	–	4·95	3·00	0·017	0·079	5·10	3·07	0·045	0·096	10
–	–	–	–	4·81	2·85	0·049	0·092	4·48	2·46	0·111	0·117	11
–	–	–	–	3·43	1·56	0·102	0·079	3·27	1·39	0·130	0·071	12
3·99	2·07	0·035	0·057	4·37	2·42	0·061	0·062	3·99	2·04	0·061	0·076	13
2·79	0·83	0·028	0·020	2·93	0·97	0·043	0·026	2·68	0·82	0·050	–	14
3·65	1·68	0·028	0·032	3·93	1·95	0·031	0·041	3·82	1·84	0·019	0·037	15
4·56	2·59	0·021	0·061	5·14	3·16	0·035	0·065	4·93	2·92	0·041	0·060	16
4·56	2·64	0·034	0·063	5·16	3·20	0·059	0·068	4·75	2·78	0·064	0·069	17
3·39	1·57	0·060	0·077	3·55	1·65	0·106	0·072	3·23	1·32	0·090	0·110	18
3·92	2·01	0·035	0·072	4·23	2·28	0·048	0·062	4·10	2·13	0·043	0·069	19
2·89	0·96	0·032	0·019	2·85	0·91	0·028	0·023	2·35	0·59	–	–	20
3·64	1·67	0·020	0·040	3·83	1·83	0·026	0·042	3·99	1·88	0·045	0·104	21
4·51	2·54	0·023	0·076	4·98	2·96	0·032	0·060	4·93	2·96	0·041	0·057	22
4·44	2·52	0·031	0·078	4·97	3·01	0·046	0·076	4·83	2·75	0·045	0·091	23
3·27	1·46	0·056	0·088	3·43	1·55	0·083	0·073	3·12	1·26	0·048	0·055	24
4·30	2·37	0·028	0·050	4·77	2·80	0·042	0·048	4·55	2·57	0·061	0·057	25
2·75	0·74	0·031	0·034	2·86	0·84	0·035	0·028	2·81	0·82	0·041	0·031	26
3·67	1·65	0·019	0·040	4·14	2·12	0·027	0·031	4·28	2·26	0·033	0·035	27
4·85	2·87	0·019	0·056	5·68	3·68	0·029	0·053	5·89	3·88	0·039	0·052	28
5·04	3·12	0·028	0·054	5·72	3·76	0·044	0·058	5·66	3·68	0·057	0·069	29
3·72	1·94	0·051	0·052	3·79	1·92	0·070	0·054	3·33	1·40	0·095	0·066	30
3·64	1·72	0·022	0·044	3·79	1·85	0·033	0·046	3·59	1·65	0·052	0·055	31
2·65	0·69	0·020	0·017	2·77	0·83	0·031	0·012	2·80	0·88	0·026	0·016	32
3·29	1·31	0·012	0·028	3·55	1·57	0·016	0·026	3·67	1·68	0·023	0·025	33
4·07	2·11	0·013	0·045	4·41	2·45	0·017	0·042	4·51	2·55	0·025	0·045	34
4·08	2·16	0·021	0·049	4·35	2·41	0·030	0·051	4·25	2·31	0·045	0·059	35
3·12	1·31	0·041	0·054	3·04	1·16	0·062	0·062	2·83	0·92	0·081	0·071	36
3·79	1·87	0·021	0·037	4·14	2·19	0·036	0·036	4·02	2·07	0·058	0·036	37
2·55	0·63	0·029	0·016	2·70	0·80	0·028	0·015	2·75	0·84	0·059	0·012	38
8·14	1·16	0·017	0·030	3·56	1·58	0·028	0·028	3·61	1·63	0·047	0·017	39
4·11	2·15	0·017	0·044	4·68	2·70	0·021	0·038	4·73	2·77	0·042	0·045	40
4·31	2·39	0·018	0·041	4·78	2·84	0·026	0·040	4·79	2·86	0·040	0·040	41
3·41	1·59	0·033	0·033	3·36	1·46	0·069	0·039	3·21	1·28	0·087	0·036	42
3·87	1·93	0·025	0·027	4·07	2·13	0·032	0·026	4·16	2·21	0·043	0·024	43
2·64	0·69	0·050	0·016	2·68	0·78	0·058	0·011	2·74	0·81	0·167	0·018	44
3·28	1·30	0·021	0·020	3·50	1·53	0·022	0·021	3·64	1·66	0·036	0·019	45
4·27	2·30	0·017	0·033	4·55	2·59	0·021	0·027	4·80	2·86	0·024	0·025	46
4·33	2·41	0·020	0·028	4·58	2·66	0·022	0·032	4·89	2·88	0·033	0·028	47
3·36	1·51	0·046	0·023	3·29	1·39	0·070	0·022	3·15	1·23	0·077	0·022	48
3·73	1·81	0·026	0·029	4·02	2·08	0·034	0·025	4·03	2·09	0·039	0·027	49
2·61	0·67	0·054	0·018	2·67	0·74	0·094	0·013	2·73	0·79	0·103	0·022	50
3·22	1·25	0·018	0·021	3·52	1·55	0·022	0·020	3·54	1·57	0·028	0·021	51
4·07	2·12	0·018	0·032	4·52	2·58	0·020	0·026	4·54	2·59	0·018	0·029	52
4·20	2·28	0·023	0·034	4·50	2·57	0·028	0·032	4·52	2·59	0·033	0·027	53
3·22	1·37	0·045	0·027	3·30	1·40	0·067	0·022	3·21	1·29	0·087	0·029	54
3·50	1·60	0·021	0·033	3·75	1·83	0·026	0·023	3·74	1·80	0·028	0·033	55
2·57	0·68	0·032	0·015	2·61	0·70	0·040	0·009	2·81	0·85	0·115	0·038	56
3·12	1·17	0·016	0·025	3·31	1·35	0·015	0·017	3·51	1·54	0·016	0·057	57
3·83	1·91	0·013	0·037	4·17	2·23	0·015	0·024	4·30	2·36	0·011	0·026	58
3·85	1·95	0·017	0·034	4·19	2·27	0·021	0·022	4·09	2·18	0·018	0·048	59
3·07	1·23	0·037	0·034	3·20	1·32	0·053	0·029	3·06	1·14	0·052	0·030	60

TABLE 9. Private families of two or more persons, showing average number per family of persons, own children, guardianship children and other dependents, by nativity and age of head, rural and urban by size groups, Canada, 1931

Age and Nativity of Head	Number per Family							
	Total				Rural			
	Persons	Children	Guardianship Children	Other Dependents	Persons	Children	Guardianship Children	Other Dependents
Canadian born	**4·30**	**2·34**	**0·046**	**0·059**	**4·57**	**2·58**	**0·057**	**0·065**
Under 25	2·78	0·81	0·053	0·028	2·82	0·84	0·071	0·035
25-34	3·86	1·85	0·027	0·038	4·06	2·05	0·032	0·043
35-44	5·12	3·12	0·028	0·062	5·58	3·56	0·033	0·069
45-54	5·15	3·18	0·042	0·071	5·61	3·61	0·051	0·080
55 and over	3·50	1·61	0·078	0·068	3·66	1·73	0·092	0·071
British born	**3·77**	**1·84**	**0·025**	**0·030**	**3·94**	**2·00**	**0·030**	**0·030**
Under 25	2·68	0·74	0·020	0·016	2·72	0·80	0·022	0·019
25-34	3·37	1·39	0·013	0·025	3·53	1·55	0·015	0·025
35-44	4·20	2·23	0·042	0·033	4·44	2·47	0·018	0·031
45-54	4·17	2·24	0·042	0·022	4·35	2·40	0·024	0·030
55 and over	3·17	1·32	0·050	0·032	3·25	1·37	0·058	0·034
United States born	**4·22**	**2·27**	**0·037**	**0·038**	**4·52**	**2·55**	**0·042**	**0·036**
Under 25	2·73	0·80	0·047	0·019	2·78	0·84	0·058	0·024
25-34	3·74	1·76	0·028	0·031	3·91	1·91	0·033	0·032
35-44	4·81	2·83	0·026	0·043	5·17	3·18	0·030	0·040
45-54	4·75	2·80	0·032	0·040	5·18	3·22	0·034	0·037
55 and over	3·38	1·49	0·072	0·037	3·60	1·67	0·083	0·033
European born	**4·56**	**2·61**	**0·025**	**0·025**	**4·95**	**2·99**	**0·030**	**0·028**
Under 25	2·66	0·71	0·038	0·022	2·72	0·77	0·054	0·026
25-34	3·53	1·54	0·015	0·022	3·82	1·82	0·019	0·026
35-44	5·03	3·05	0·015	0·030	5·55	3·55	0·018	0·035
45-54	5·47	3·54	0·020	0·027	5·98	4·03	0·025	0·031
55 and over	3·94	2·07	0·054	0·017	4·16	2·27	0·061	0·018
Elsewhere born	**4·55**	**2·62**	**0·026**	**0·025**	**4·57**	**2·62**	**0·019**	**0·019**
Under 25	2·66	0·79	0·046	0·074	2·76	0·91	–	0·091
25-34	3·61	1·62	0·023	0·030	3·73	1·74	0·012	0·025
35-44	4·71	2·76	0·016	0·029	4·75	2·77	0·019	0·025
45-54	5·02	3·12	0·023	0·020	5·00	3·09	0·014	0·010
55 and over	4·42	2·55	0·055	0·018	4·36	2·47	0·038	0·011

Age and Nativity of Head	Number per Family											
	Urban 30,000 and over				Urban 1,000-30,000				Urban under 1,000			
	Persons	Children	Guardianship Children	Other Dependents	Persons	Children	Guardianship Children	Other Dependents	Persons	Children	Guardianship Children	Other Dependents
Canadian born	**3·95**	**2·03**	**0·029**	**0·055**	**4·20**	**2·25**	**0·042**	**0·053**	**4·12**	**2·16**	**0·057**	**0·051**
Under 25	2·70	0·73	0·032	0·024	2·82	0·85	0·038	0·019	2·78	0·83	0·072	0·020
25-34	3·53	1·54	0·019	0·037	3·85	1·86	0·024	0·031	3·72	1·82	0·031	0·029
35-44	4·49	2·52	0·019	0·060	5·02	3·04	0·026	0·053	5·15	3·18	0·032	0·045
45-54	4·54	2·63	0·029	0·065	4·98	3·03	0·040	0·063	4·96	3·00	0·049	0·057
55 and over	3·40	1·60	0·049	0·064	3·34	1·46	0·072	0·066	3·13	1·21	0·089	0·064
British born	**3·63**	**1·72**	**0·020**	**0·030**	**3·84**	**1·90**	**0·029**	**0·030**	**3·84**	**1·89**	**0·038**	**0·029**
Under 25	2·63	0·69	0·014	0·014	2·74	0·79	0·019	0·014	2·79	0·77	0·144	0·042
25-34	3·23	1·25	0·012	0·026	3·48	1·49	0·014	0·025	3·50	1·52	0·020	0·021
35-44	3·98	2·03	0·012	0·034	4·31	2·35	0·015	0·033	4·35	2·39	0·024	0·025
45-54	4·00	2·09	0·018	0·031	4·27	2·33	0·026	0·030	4·30	2·35	0·027	0·030
55 and over	3·14	1·32	0·038	0·030	3·14	1·27	0·060	0·033	2·98	1·07	0·069	0·035
United States born	**3·67**	**1·75**	**0·027**	**0·042**	**4·09**	**2·14**	**0·034**	**0·040**	**4·18**	**2·24**	**0·039**	**0·029**
Under 25	2·63	0·69	0·030	0·019	2·75	0·81	0·038	0·011	2·75	0·92	0·060	–
25-34	3·37	1·40	0·018	0·033	3·74	1·75	0·024	0·030	3·74	1·78	0·033	0·016
35-44	4·08	2·13	0·019	0·049	4·70	2·73	0·023	0·044	4·77	2·83	0·024	0·033
45-54	4·02	2·11	0·026	0·044	4·49	2·56	0·031	0·045	4·59	2·65	0·035	0·032
55 and over	3·08	1·26	0·050	0·044	3·23	1·33	0·065	0·044	3·19	1·28	0·073	0·033
European born	**4·11**	**2·17**	**0·015**	**0·023**	**4·27**	**2·32**	**0·023**	**0·018**	**4·37**	**2·43**	**0·041**	**0·022**
Under 25	2·56	0·60	0·021	0·021	2·69	0·76	0·033	0·005	2·66	0·79	0·038	0·050
25-34	3·24	1·25	0·011	0·020	3·39	1·40	0·012	0·013	3·70	1·73	0·031	0·017
35-44	4·49	2·53	0·011	0·028	4·64	2·67	0·014	0·022	5·13	3·17	0·019	0·026
45-54	4·87	2·97	0·012	0·024	5·06	3·15	0·021	0·019	5·21	3·29	0·033	0·026
55 and over	3·70	1·86	0·033	0·015	3·65	1·76	0·060	0·016	3·22	1·31	0·084	0·015
Elsewhere born	**4·45**	**2·53**	**0·025**	**0·029**	**4·78**	**2·86**	**0·034**	**0·028**	**4·32**	**2·43**	**0·080**	**0·036**
Under 25	2·70	0·76	0·056	0·074	2·47	0·87	–	0·067	2·17	0·17	–	–
25-34	3·47	1·48	0·020	0·030	3·81	1·84	0·024	0·032	3·50	1·35	–	–
35-44	4·52	2·59	0·012	0·030	5·14	3·16	0·022	0·034	4·71	2·81	–	–
45-54	5·05	3·15	0·025	0·027	5·02	3·14	0·031	0·020	4·70	2·91	–	–
55 and over	4·40	2·54	0·059	0·022	4·63	2·74	0·075	0·025	3·97	2·26	–	–

TABLE 10. Number of families of two or more persons and number of own children living at home, by racial origin of head, rural and urban by size groups, Canada and provinces, 1931

Province	Racial Origin							
	All Races		British		French		Other and Unspecified	
	Families	Own Children	Families	Own Children	Families	Own Children	Families	Own Children
CANADA	**2,149,048**	**4,881,050**	**1,230,184**	**2,312,702**	**525,730**	**1,612,953**	**393,134**	**955,395**
Rural	943,099	2,406,411	497,723	1,031,056	229,610	795,161	215,766	580,194
Urban 30,000 and over	668,206	1,300,442	410,690	690,029	152,365	392,385	105,151	218,028
Urban 1,000-30,000	450,545	986,240	274,299	505,658	118,454	356,298	57,792	124,284
Urban under 1,000	87,198	187,957	47,472	85,959	25,301	69,109	14,425	32,889
Prince Edward Island	**18,334**	**41,871**	**15,646**	**34,770**	**2,402**	**6,536**	**286**	**565**
Rural	14,072	32,628	12,056	27,374	1,825	4,888	191	366
Urban 30,000 and over	–	–	–	–	–	–	–	–
Urban 1,000-30,000	3,564	7,807	2,977	6,157	510	1,485	77	165
Urban under 1,000	698	1,436	613	1,239	67	163	18	34
Nova Scotia	**106,842**	**247,623**	**82,703**	**187,663**	**10,779**	**29,489**	**13,340**	**30,471**
Rural	58,913	136,663	42,987	97,038	7,584	20,642	8,342	18,983
Urban 30,000 and over	12,376	25,615	10,662	21,800	634	1,549	1,080	2,266
Urban 1,000-30,000	33,662	81,483	27,375	65,405	2,509	7,165	3,778	8,913
Urban under 1,000	1,891	3,862	1,679	3,420	72	133	140	309
New Brunswick	**81,212**	**208,139**	**54,979**	**121,289**	**22,951**	**79,410**	**3,282**	**7,440**
Rural	53,725	148,419	33,183	78,204	18,560	65,701	1,982	4,514
Urban 30,000 and over	10,565	21,231	9,465	18,391	456	1,350	644	1,490
Urban 1,000-30,000	16,459	37,503	11,952	23,971	3,877	12,153	630	1,379
Urban under 1,000	463	986	379	723	58	206	26	57
Quebec	**537,234**	**1,521,774**	**96,731**	**184,415**	**406,225**	**1,261,926**	**34,278**	**75,433**
Rural	181,754	623,867	18,891	43,331	158,729	570,146	4,134	10,390
Urban 30,000 and over	211,676	501,022	51,416	93,377	135,369	354,051	24,891	53,594
Urban 1,000-30,000	118,036	330,552	22,431	41,138	90,671	278,554	4,934	10,860
Urban under 1,000	25,768	66,333	3,993	6,569	21,456	59,175	319	589
Ontario	**783,857**	**1,469,827**	**603,379**	**1,056,272**	**56,359**	**158,592**	**124,119**	**254,963**
Rural	293,388	600,691	220,528	420,376	24,693	77,135	48,167	103,180
Urban 30,000 and over	261,395	449,524	207,376	337,559	12,208	28,610	41,721	83,355
Urban 1,000-30,000	209,503	387,347	159,446	273,416	17,882	49,045	32,175	64,886
Urban under 1,000	19,571	32,265	16,029	24,921	1,486	3,802	2,056	3,542
Manitoba	**143,189**	**331,693**	**81,968**	**161,563**	**8,156**	**25,194**	**53,065**	**144,936**
Rural	74,338	197,093	36,903	81,503	5,563	18,601	31,872	96,989
Urban 30,000 and over	48,662	90,940	31,651	53,875	980	1,899	16,031	35,166
Urban 1,000-30,000	15,495	33,928	10,013	19,616	1,461	4,324	4,021	9,988
Urban under 1,000	4,694	9,732	3,401	6,569	152	370	1,141	2,793
Saskatchewan	**177,732**	**458,861**	**92,387**	**202,457**	**8,805**	**26,886**	**76,540**	**229,518**
Rural	116,831	331,614	50,531	120,873	6,492	21,003	59,808	189,738
Urban 30,000 and over	21,044	40,548	15,537	28,363	440	985	5,067	11,200
Urban 1,000-30,000	18,381	39,154	13,144	26,371	694	1,801	4,543	10,982
Urban under 1,000	21,476	47,545	13,175	26,850	1,179	3,097	7,122	17,598
Alberta	**148,551**	**338,379**	**85,145**	**172,837**	**6,992**	**19,203**	**56,414**	**146,339**
Rural	86,924	220,165	39,647	89,096	4,723	14,062	42,554	117,007
Urban 30,000 and over	37,037	66,921	28,992	51,010	1,101	2,226	6,944	13,685
Urban 1,000-30,000	13,997	29,176	9,056	19,880	401	914	3,640	8,382
Urban under 1,000	10,593	22,117	6,550	12,851	767	2,001	3,276	7,265
British Columbia	**152,097**	**262,883**	**117,246**	**191,436**	**3,041**	**5,717**	**31,810**	**65,730**
Rural	63,154	115,271	42,997	73,261	1,441	2,933	18,716	39,027
Urban 30,000 and over	65,451	104,641	55,591	85,654	1,087	1,715	8,773	17,272
Urban 1,000-30,000	21,448	39,290	17,005	29,704	449	857	3,994	8,729
Urban under 1,000	2,044	3,681	1,653	2,817	64	162	327	702

TABLE 11. Average earnings of heads of families, average number of children earning per family and average earnings per child, by selected occupations of heads, Canada, by provinces[3], 1931

No.	Occupation	Novn Scotia			New Brunswick			Quebec		
		Aver-age Earn-ings of Heads	Chil-dren per Family Earn-ing	Earn-ings per Child	Aver-nge Earn-ings of Heads	Chil-dren per Family Earn-ing	Enrn-ings per Child	Aver-nge Enrn-ings of Hcads	Chil-dren per Family Earn-ing	Earn-ings per Child
		$		$	$		$	$		$
1	Farm labourers	4·81	0·25	3·23	4·31	0·22	2·81	5·19	0·32	3·80
2	Fishermen	4·84	0·39	2·68	4·62	0·37	2·19	3·90	0·36	3·04
3	Lumhermen	4·17	0·30	2·73	3·45	0·32	2·45	4·43	0·34	2·66
4	Miners	6·84	0·35	4·42	7·15	0·32	3·74	7·76	0·20	3·08
5	Lahourers (mining)	6·04	0·34	4·54	4·79	0·19	3·07	6·35	0·37	3·50
6	Bakers (mfg.)	10·67	0·20	6·43	11·09	0·30	5·21	9·67	0·54	5·03
7	Butchers and slaughterers (mfg.)	10·27	0·47	5·23	9·39	0·19	3·72	10·26	0·44	5·23
8	Tailors (mfg.)	10·12	0·56	5·11	10·73	0·52	5·90	9·47	0·64	5·79
9	Compositors; printers, n.s	14·12	0·23	5·09	15·95	0·25	7·17	15·72	0·42	6·31
10	Moulders, core makers, and casters	9·13	0·39	4·57	9·49	0·48	4·90	8·99	0·57	5·13
11	Blacksmiths, hammermen, and forge-men (mfg.)	8·28	0·45	4·67	10·32	0·45	3·87	9·83	0·71	4·94
12	Machinists (mfg.)	10·51	0·34	5·05	12·96	0·35	5·47	11·33	0·53	5·45
13	Boilermakers, platers, and riveters (mfg.)	9·22	0·52	4·48	12·86	0·37	5·26	10·24	0·55	5·13
14	Mechanics, n.e.s. (mfg.)	10·21	0·18	4·82	11·08	0·13	4·43	11·42	0·74	4·83
15	Brick and stone masons	8·48	0·37	4·34	10·00	0·55	3·79	9·31	0·32	4·68
16	Carpenters	7·04	0·45	4·17	7·65	0·47	3·90	8·62	0·71	4·54
17	Electricians and wiremen	13·35	0·23	4·81	13·33	0·13	5·88	12·90	0·25	5·18
18	Painters, decorators, and glaziers	7·24	0·37	4·56	8·48	0·40	4·57	8·67	0·46	4·70
19	Plumhers, stenm fitters, and gas fitters	10·38	0·24	6·37	12·28	0·26	4·87	10·91	0·41	5·10
20	Agents—ticket and station (rnilway)	18·32	0·18	7·21	18·04	0·21	7·11	20·56	0·28	6·94
21	Conductors (steam railway)	19·27	0·49	5·69	21·96	0·44	5·09	20·20	0·48	6·34
22	Locomotive engineers	19·70	0·45	4·85	22·47	0·44	6·05	20·00	0·48	5·87
23	Locomotivs firemen	14·32	0·19	3·92	14·90	0·23	3·93	13·99	0·25	3·71
24	Brakemen	13·91	0·22	4·43	15·15	0·15	4·60	14·21	0·32	4·30
25	Conductors and motormen (street car)	13·63	0·20	5·03	13·65	0·10	5·70	13·07	0·41	5·21
26	Ssction foremen, ssctionmen; trackmsn	9·68	0·37	3·81	10·00	0·28	4·02	10·11	0·44	3·63
27	Seamen, sailors, and deckhands	7·58	0·25	3·73	6·92	0·22	5·16	7·39	0·30	3·79
28	Truck drivers	8·63	0·14	4·05	8·55	0·16	4·42	9·51	0·22	4·33
29	Teamsters, draymen, carriage drivers	7·95	0·32	4·27	7·22	0·36	3·44	8·37	0·46	4·09
30	Shippers (warehousing and storage)	10·95	0·34	5·00	11·08	0·36	5·50	11·51	0·45	5·93
31	Commsrcial travsllers	20·10	0·23	6·44	18·58	0·24	7·55	18·98	0·39	6·97
32	Salesmen	11·78	0·22	6·12	12·43	0·18	6·18	12·83	0·30	5·96
33	Police and detectives	14·13	0·23	4·83	13·62	0·30	5·50	15·81	0·43	5·86
34	Clergymen	16·43	0·12	4·99	16·62	0·15	7·38	19·90	0·32	8·40
35	Teachers—school	19·18	0·10	7·35	17·74	0·12	5·73	19·67	0·22	7·17
36	Engineers[1] (professional service)	21·54	0·21	4·98	21·43	0·25	6·06	29·61	0·22	7·32
37	Accountants and auditors	22·86	0·18	7·10	21·71	0·17	7·94	25·39	0·27	8·28
38	Janitors and sextons	8·23	0·44	4·93	8·44	0·51	4·58	8·56	0·52	5·77
39	Watchmen and caretaksrs	9·05	0·52	5·05	8·78	0·59	4·55	8·99	0·78	5·16
40	Cooks	7·85	0·36	4·10	6·78	0·31	3·46	8·90	0·34	4·28
41	Other clerical (offics clerks)	14·25	0·25	6·16	14·76	0·19	5·97	15·06	0·28	6·79
42	Labourers and unskillsd worksrs[2]	4·82	0·32	3·33	4·80	0·33	3·03	6·03	0·51	3·78
43	Unwsighted mean for all occupations	11·43	–	4·87	11·81	–	4·86	12·23	–	5·19

[1] Exclusivs of mining engineers.
[2] Not agricultural, mining, or logging.
[3] Exclusive of Prince Edward Island.

TABLE 11. Average earnings of heads of families, average number of children earning per family and average earnings per child, by selected occupations of heads, Canada, by provinces[3], 1931

Ontario			Manitoba			Saskatchewan			Alberta			British Columbia			
Average Earnings of Heads	Children per Family Earning	Earnings per Child	Average Earnings of Heads	Children per Family Earning	Earnings per Child	Average Earnings of Heads	Children per Family Earning	Earnings per Child	Average Earnings of Heads	Children per Family Earning	Earnings per Child	Average Earnings of Heads	Children per Family Earning	Earnings per Child	No.
$		$	$		$	$		$	$		$	$		$	
5·34	0·23	4·30	3·21	0·16	2·71	3·22	0·13	2·14	4·13	0·12	3·45	6·03	0·22	4·44	1
7·48	0·22	4·50	3·31	0·27	2·15	–	–	–	–	–	–	5·36	0·26	3·43	2
4·72	0·28	3·23	3·49	0·31	1·37	–	–	–	6·46	0·21	3·19	6·70	0·13	3·80	3
12·30	0·14	5·77	9·77	0·06	1·50	4·99	0·24	3·21	7·44	0·21	4·65	7·70	0·38	4·36	4
8·46	0·22	4·19	7·55	0·21	4·95	6·15	0·09	3·68	6·89	0·31	5·02	8·50	0·24	5·32	5
10·80	0·35	5·87	10·15	0·33	5·07	11·50	0·18	6·11	11·30	0·26	5·45	11·64	0·35	6·18	6
10·45	0·32	6·01	9·36	0·45	5·66	9·06	0·23	5·85	10·27	0·22	5·58	11·65	0·32	6·12	7
9·14	0·59	6·01	8·34	0·49	5·61	9·58	0·46	6·03	9·78	0·43	6·68	9·70	0·53	5·90	8
16·55	0·27	7·31	17·41	0·30	7·15	19·96	0·21	7·84	18·91	0·25	7·12	17·73	0·29	6·61	9
7·35	0·44	5·03	10·07	0·38	4·03	–	–	–	9·23	0·32	6·02	11·43	0·39	5·12	10
9·46	0·45	5·55	10·80	0·43	6·29	8·40	0·30	6·45	11·22	0·34	5·25	10·48	0·40	5·70	11
10·49	0·33	5·82	12·60	0·31	6·49	11·58	0·27	5·70	12·47	0·27	5·98	11·99	0·28	6·20	12
10·59	0·43	5·64	12·12	0·54	4·94	13·56	0·52	5·54	11·65	0·34	4·40	10·83	0·50	5·94	13
11·25	0·18	5·94	10·58	0·16	4·77	9·83	0·04	4·90	10·90	0·11	5·20	11·74	0·15	5·48	14
8·36	0·56	5·61	8·14	0·59	5·38	7·82	0·46	5·28	8·78	0·43	4·84	10·07	0·51	6·23	15
8·62	0·48	5·69	8·46	0·51	4·99	6·36	0·39	4·64	8·47	0·41	5·77	8·63	0·45	5·72	16
14·13	0·19	6·10	14·93	0·22	5·39	14·19	0·22	7·48	15·06	0·13	6·48	14·58	0·16	6·60	17
8·53	0·37	5·52	9·02	0·38	5·19	7·68	0·28	5·46	8·70	0·30	5·81	8·26	0·38	5·49	18
11·41	0·30	5·62	11·83	0·37	6·06	11·86	0·39	6·10	12·10	0·30	5·78	11·57	0·33	5·90	19
19·71	0·18	6·82	21·30	0·17	6·98	20·21	0·11	5·57	20·40	0·14	7·31	22·20	0·24	7·12	20
21·88	0·42	6·52	22·47	0·35	6·36	22·43	0·20	5·47	22·74	0·27	6·95	21·45	0·31	5·63	21
23·55	0·37	6·35	22·48	0·36	6·00	24·62	0·21	5·56	23·29	0·29	5·59	21·64	0·29	5·82	22
15·23	0·16	5·50	10·93	0·12	4·49	12·78	0·13	4·77	12·37	0·07	3·50	13·47	0·05	5·96	23
14·95	0·21	5·49	13·64	0·24	5·32	12·30	0·13	4·09	13·48	0·11	5·45	14·09	0·17	4·47	24
13·48	0·37	6·18	12·28	0·41	5·72	15·50	0·35	6·40	14·41	0·35	5·86	14·78	0·34	6·16	25
10·51	0·28	4·48	9·07	0·27	3·16	9·88	0·18	3·69	10·69	0·17	4·46	10·46	0·20	4·62	26
8·90	0·20	5·13	–	–	–	–	–	–	–	–	–	9·26	0·22	5·48	27
9·72	0·16	5·24	9·55	0·17	4·74	9·47	0·17	4·50	9·99	0·16	5·48	10·29	0·17	5·12	28
9·06	0·38	4·94	8·42	0·42	3·83	8·41	0·35	4·31	8·79	0·26	5·23	8·97	0·29	5·11	29
11·07	0·32	6·16	12·14	0·36	6·41	12·50	0·26	6·56	12·29	0·22	5·97	12·72	0·32	6·28	30
21·33	0·27	7·86	17·85	0·33	7·27	18·10	0·23	6·01	18·64	0·21	6·38	10·20	0·30	6·56	31
14·08	0·21	6·94	13·78	0·24	6·31	12·71	0·14	4·95	13·76	0·17	6·33	13·47	0·22	6·51	32
17·09	0·25	6·40	16·36	0·27	5·83	15·70	0·16	6·24	16·57	0·20	6·81	16·89	0·20	5·67	33
19·18	0·20	7·95	18·65	0·24	6·86	15·35	0·11	6·47	15·63	0·15	7·76	17·27	0·17	6·35	34
24·90	0·12	9·29	18·03	0·17	5·73	16·55	0·05	5·78	18·09	0·07	7·83	21·87	0·15	7·75	35
28·16	0·15	7·48	27·41	0·18	7·37	22·40	0·15	6·20	24·37	0·15	6·67	22·05	0·20	6·93	36
24·12	0·15	8·93	23·15	0·21	8·42	24·22	0·12	7·03	23·38	0·16	7·95	21·64	0·19	7·09	37
9·52	0·49	6·02	19·17	0·49	6·07	8·59	0·40	4·65	9·90	0·39	6·13	9·43	0·44	5·95	38
10·17	0·55	5·78	10·26	0·49	5·05	10·47	0·36	5·32	10·41	0·43	5·62	10·43	0·39	6·10	39
9·43	0·23	5·30	9·19	0·22	4·56	8·56	0·22	4·63	9·97	0·16	5·96	8·78	0·28	5·52	40
15·36	0·21	7·22	15·40	0·22	6·81	14·90	0·19	6·67	14·88	0·22	7·39	14·66	0·25	7·06	41
6·24	0·35	4·34	5·32	0·33	3·61	4·99	0·27	3·18	5·98	0·26	4·36	6·70	0·32	4·84	42
12·94	–	5·95	12·40	–	5·28	12·55	–	5·38	12·85	–	5·79	12·56	–	5·78	43

TABLE 12. Occupations ranked according to earnings of heads of families, size of family, earnings of children, percentage of children 15 years of age and over at school and children gainfully occupied, Quebec, 1930-1931

Occupation	X_1 Earnings of Heads	X_2 Smallness of Family	X_3 Earnings of Children	X_4 P.C. of Children 15 Years of Age and over at School	X_5 Children Gainfully Occupied	X_6 Children Gainfully Occupied as P.C. of Children 15 Years of Age and over
Engineers[1] (professional service)	1	3	3	3	41	41
Accountants and auditors	2	8	2	4	37	36
Agents—ticket and station (railway)	3	33	6	2	34	42
Conductors (steam railway)	4	39	8	6	13	40
Locomotive engineers	5	32	12	8	12	37
Clergymen	6	1	1	1	29	39
Teachers—school	7	5	4	5	40	31
Commercial travellers	8	13	5	7	23	33
Police and detectives	9	22	13	16	19	28
Compositors; printers, n.s	10	11	9	15	20	21
Other clerical (office clerks)	11	4	7	12	36	25
Brakemen	12	37	31	10	31	35
Locomotive firemen	13	36	37	9	38	38
Conductors and motormen (street car)	14	27	18	11	22	30
Electricians and wiremen	15	15	19	14	39	29
Salesmen	16	6	10	13	33	23
Shippers (warehousing and storage)	17	10	11	22	16	6
Mechanics, n.e.s. (mfg.)	18	18	26	17	2	27
Machinists (mfg.)	19	19	16	23	9	10
Plumbers, steam fitters, and gas fitters	20	23	23	18	21	19
Butchers and slaughterers (mfg.)	21	17	17	21	18	11
Boilermakers, platers, and riveters (mfg.)	22	21	21	32	7	7
Section foremen, sectionmen; trackmen	23	42	38	24	17	34
Blacksmiths, hammermen, and forgemen (mfg.)	24	34	25	35	4	12
Bakers (mfg.)	25	24	24	33	8	3
Truck drivers	26	9	30	25	42	17
Tailors (mfg.)	27	12	14	20	5	2
Brick and stone masons	28	30	28	37	28	14
Moulders, coremakers, and casters	29	26	22	38	6	1
Watchmen and caretakers	30	25	20	39	1	8
Cooks	31	7	32	30	27	13
Painters, decorators, and glaziers	32	14	27	22	15	9
Carpenters	33	41	29	28	3	16
Janitors and sextons	34	2	15	19	10	15
Teamsters, draymen, carriage drivers	35	29	33	40	14	5
Miners	36	28	40	26	35	26
Seamen, sailors, and deckhands	37	20	35	29	32	32
Labourers (mining)	38	38	39	36	24	20
Labourers and unskilled workers[2]	39	31	36	41	11	4
Farm labourers	40	16	34	34	30	18
Lumbermen	41	40	42	42	26	22
Fishermen	42	35	41	31	25	24

[1]Exclusive of mining engineers. [2]Not agricultural, mining, or logging.

TABLE 13. Occupations ranked according to earnings of heads of families, size of family, earnings of children, percentage of children 15 years of age and over at school and children gainfully occupied, Ontario, 1930-1931

Occupation	X_1 Earnings of Heads	X_2 Smallness of Family	X_3 Earnings of Children	X_4 P.C. of Children 15 Years of Age and over at School	X_5 Children Gainfully Occupied	X_6 Children Gainfully Occupied as P.C. of Children 15 Years of Age and over
Engineers[1] (professional service)	1	6	5	3	40	39
Teachers—school	2	1	1	2	42	40
Accountants and auditors	3	2	2	5	39	36
Locomotive engineers	4	39	12	6	11	38
Conductors (steam railway)	5	31	10	9	9	34
Commercial travellers	6	5	4	8	22	31
Agents—ticket and station (railway)	7	19	9	4	36	41
Clergymen	8	12	3	1	33	42
Police and detectives	9	14	11	12	24	28
Compositors; printers, n.s.	10	9	6	16	23	19
Other clerical (office clerks)	11	3	7	14	29	25
Locomotive firemen	12	40	30	7	38	33
Brakemen	13	33	31	10	30	35
Electricians and wiremen	14	13	15	11	34	30
Salesmen	15	4	8	13	31	26
Conductors and motormen (street car)	16	24	13	21	12	17
Miners	17	28	23	18	41	37
Plumbers, steam fitters, and gas fitters	18	25	26	15	19	20
Mechanics, n.e.s. (mfg.)	19	11	19	17	35	21
Shippers (warehousing and storage)	20	10	14	27	17	3
Bakers (mfg.)	21	22	20	34	15	4
Boilermakers, platers, and riveters (mfg.)	22	29	25	24	8	14
Section foremen, sectionmen; trackmen	23	42	38	28	2	32
Machinists (mfg.)	24	17	21	23	16	16
Butchers and slaughterers (mfg.)	25	23	17	25	18	10
Watchmen and caretakers	26	18	22	40	3	2
Truck drivers	27	15	33	22	37	18
Janitors and sextons	28	8	16	39	1	1
Blacksmiths, hammermen and forgemen (mfg.)	29	30	28	33	6	15
Cooks	30	16	32	19	25	27
Tailors (mfg.)	31	27	18	26	1	8
Teamsters, draymsn, carriage drivers	32	35	36	36	10	7
Seamen, sailors, and deckhands	33	7	34	20	32	24
Carpenters	34	32	24	29	5	12
Painters, decorators, and glaziers	35	21	29	30	13	9
Labourers (mining)	36	38	41	37	27	22
Brick and stone masons	37	26	27	35	2	5
Fishermen	38	37	37	32	28	29
Moulders, coremakers, and casters	39	36	35	31	7	6
Labourers and unskilled workmen[2]	40	34	39	38	14	11
Farm labourers	41	20	40	41	26	13
Lumbermen	42	41	42	42	20	23

[1]Exclusive of mining engineers. [2]Not agricultural, mining, or logging.

TABLE 14. Order of birth of legitimate children born in 1931 (including stillborn children), by age of mother, Canada and provinces, 1931

Age Group of Mother and Order of Birth of Child	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
ALL AGES	**239,294**	**1,850**	**11,363**	**10,761**	**83,414**	**68,928**	**14,305**	**21,238**	**17,048**	**10,387**
1st child	55,486	411	2,649	2,001	14,593	19,660	3,749	4,746	4,402	3,376
2nd "	46,710	303	2,046	1,797	12,850	15,299	2,847	4,279	3,721	2,569
3rd "	33,233	286	1,536	1,329	10,479	10,325	2,053	3,098	2,607	1,620
4th "	24,905	182	1,226	1,106	8,536	7,202	1,509	2,309	1,803	1,032
5th "	18,873	171	949	913	7,098	4,942	1,138	1,779	1,250	633
6th "	14,530	144	756	744	5,857	3,494	806	1,327	977	425
7th "	11,930	107	604	696	5,302	2,508	623	1,066	712	312
8th "	9,457	72	445	606	4,519	1,815	470	767	660	203
9th "	7,099	51	345	468	3,611	1,232	341	591	340	120
10th "	5,525	53	281	348	2,945	857	245	471	257	68
11th "	3,939	28	195	267	2,240	551	179	289	135	66
12th "	3,022	15	134	176	1,803	379	150	209	115	41
13th "	1,978	7	75	141	1,280	209	72	118	66	10
14th "	1,356	6	60	75	874	137	58	94	42	10
16th "	834	5	31	34	589	71	31	44	25	4
16th "	483	2	18	30	333	43	16	29	10	2
17th "	267	1	4	16	207	15	9	10	3	2
18th "	172	-	6	8	137	14	3	2	3	-
19th "	82	-	1	4	67	3	1	3	3	
20th and over	100	-	1	-	76	9	3	6	6	-
Not stated	313	6	3	2	18	263	2	2	11	6
Under 15 years	*14*	-	*3*	*3*	*1*	*4*	-	-	*3*	-
1st child	14	-	3	3	1	4	-	-	3	-
15-19 years	**12,897**	**95**	**919**	**740**	**2,698**	**4,680**	**809**	**1,294**	**1,125**	**637**
1st child	9,639	75	669	491	1,930	3,464	661	983	866	611
2nd "	2,727	15	212	206	623	932	133	274	221	111
3rd "	458	3	27	41	125	160	21	33	36	12
4th "	62	2	9	2	18	18	4	4	3	2
5th "	7	-	2	-	2	2	-	-	-	1
Not stated	4	-	-	-	-	4	-	-	-	-
15 years	*101*	*2*	*16*	*9*	*26*	*37*	*2*	*7*	*1*	*1*
1st child	96	2	14	9	26	36	1	6	1	1
2nd "	5	-	2	-	-	1	1	1	-	-
16 years	*510*	*3*	*44*	*42*	*97*	*217*	*25*	*38*	*32*	*12*
1st child	468	3	43	38	84	200	22	35	31	12
2nd "	40	-	1	4	13	15	3	3	1	-
3rd "	1	-	-	-	-	1	-	-	-	-
Not stated	1	-	-	-	-	1	-	-	-	-
17 years	*1,699*	*15*	*153*	*123*	*300*	*640*	*81*	*161*	*134*	*92*
1st child	1,454	14	125	102	253	547	69	141	118	85
2nd "	217	1	23	18	43	84	11	18	13	6
3rd "	23	-	4	2	4	7	1	1	3	1
4th "	5	-	1	1	-	2	-	1	-	-
18 years	*4,101*	*28*	*288*	*228*	*803*	*1,477*	*267*	*425*	*375*	*210*
1st child	3,196	21	203	150	603	1,166	219	342	320	172
2nd "	789	5	76	67	179	262	41	76	49	34
3rd "	104	1	7	11	21	43	6	7	6	3
4th "	8	1	1	-	-	4	1	-	1	-
5th "	3	-	1	-	-	1	-	-	-	1
Not stated	1	-	-	-	-	1	-	-	-	-
19 years	*6,486*	*47*	*418*	*338*	*1,472*	*2,209*	*454*	*663*	*583*	*322*
1st child	4,425	35	284	192	964	1,515	340	459	395	241
2nd "	1,676	9	110	117	388	570	77	176	158	71
3rd "	330	2	16	28	100	109	14	25	28	8
4th "	49	1	7	1	18	12	3	3	2	2
6th "	4	-	1	-	2	1	-	-	-	-
Not stated	2	-	-	-	-	2	-	-	-	-
20-24 years	**69,846**	**441**	**3,084**	**2,739**	**18,333**	**17,792**	**3,755**	**5,022**	**4,843**	**2,037**
1st child	25,224	179	1,180	945	7,009	8,165	1,779	2,365	2,128	1,474
2nd "	18,390	128	933	822	5,391	6,514	1,142	1,979	1,561	920
3rd "	9,750	89	666	498	3,395	2,603	616	988	737	368
4th "	4,257	27	266	287	1,595	1,026	219	394	307	136
5th "	1,556	12	95	127	645	340	71	162	76	39
6th "	457	4	37	41	193	94	21	34	25	8
7th "	123	1	4	13	66	23	4	8	3	1
8th "	40	1	-	4	25	6	1	-	4	-
9th "	15	-	1	1	7	3	2	-	1	-
10th "	10	-	1	1	5	-	-	1	2	-
11th "	2	-	-	-	1	1	-	-	-	-
Not stated	22	-	1	-	1	18	-	1	-	1

TABLE 14. Order of birth of legitimate children born in 1931 (including stillborn children), by age of mother, Canada and provinces, 1931—Con.

Age Group of Mother and Order of Birth of Child	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
25-29 years	**66,212**	**441**	**2,827**	**2,683**	**24,128**	**18,894**	**3,952**	**5,663**	**4,751**	**2,873**
1st child	13,826	95	548	377	3,881	5,177	903	994	973	878
2nd "	14,977	85	535	483	4,599	4,976	936	1,306	1,214	843
3rd "	12,363	99	508	458	4,328	3,423	831	1,161	1,016	539
4th "	9,703	61	482	441	3,901	2,417	538	874	678	311
5th "	6,797	52	352	374	3,066	1,397	354	620	408	174
6th "	4,258	29	217	246	2,032	829	207	365	252	81
7th "	2,407	16	109	158	1,260	401	107	205	120	31
8th "	1,152	4	42	95	636	178	48	83	57	9
9th "	424	-	17	36	252	45	17	37	16	4
10th "	181	-	11	9	110	20	8	15	6	2
11th "	56	-	4	4	33	5	2	2	5	1
12th "	23	-	2	1	14	1	1	1	3	-
13th "	13	-	-	-	12	-	-	-	1	-
14th "	1	-	-	-	1	-	-	-	-	-
15th "	2	-	-	-	2	-	-	-	-	-
Not stated	29	-	-	1	1	25	-	-	2	-
30-34 years	**50,242**	**407**	**2,150**	**2,099**	**18,838**	**14,535**	**2,830**	**4,082**	**3,212**	**2,089**
1st child	4,802	37	167	119	1,272	1,947	317	290	303	350
2nd "	6,617	55	233	184	1,609	2,640	433	501	491	471
3rd "	6,808	53	272	201	1,859	2,580	417	552	512	362
4th "	6,616	56	281	245	2,054	2,136	432	604	501	307
5th "	6,064	53	278	226	2,182	1,730	358	584	422	231
6th "	5,363	62	273	267	2,253	1,237	286	472	369	144
7th "	4,801	35	246	269	2,292	962	237	400	246	114
8th "	3,712	24	161	242	1,979	599	162	289	194	62
9th "	2,439	14	100	153	1,437	344	99	178	89	25
10th "	1,469	12	67	96	906	167	51	116	43	12
11th "	825	4	44	50	515	107	25	56	20	4
12th "	408	2	18	28	265	45	9	25	13	3
13th "	181	-	8	15	125	14	3	10	4	2
14th "	57	-	1	2	43	4	-	3	3	1
15th "	30	-	-	-	26	2	-	2	-	-
16th "	10	-	1	1	5	1	1	1	-	-
17th "	5	-	-	-	4	1	-	-	-	-
18th "	3	-	-	-	3	-	-	-	-	-
19th "	1	-	-	-	1	-	-	-	-	-
20th and over	2	-	-	-	1	-	-	-	1	-
Not stated	29	-	-	1	7	19	-	-	1	1
35-39 years	**34,705**	**337**	**1,645**	**1,703**	**13,287**	**9,286**	**2,031**	**2,962**	**2,146**	**1,308**
1st child	1,580	19	66	51	394	645	78	94	107	126
2nd "	2,441	18	105	76	519	1,014	167	173	185	184
3rd "	3,131	32	130	108	635	1,271	213	301	242	199
4th "	3,353	27	147	104	798	1,264	257	320	234	202
5th "	3,372	44	172	149	963	1,089	265	308	240	142
6th "	3,374	38	184	147	1,094	967	212	354	244	134
7th "	3,451	41	191	186	1,344	814	200	320	247	108
8th "	3,272	35	165	203	1,421	708	176	289	195	80
9th "	2,972	28	163	198	1,429	540	147	271	145	51
10th "	2,531	28	120	164	1,345	384	114	201	137	38
11th "	1,814	10	82	138	1,061	236	69	130	68	20
12th "	1,389	6	55	71	885	168	63	88	38	15
13th "	895	6	36	54	598	79	30	55	32	5
14th "	551	3	18	23	379	52	24	35	14	3
15th "	270	1	7	12	197	24	8	12	8	1
16th "	150	1	4	9	109	8	7	8	4	-
17th "	70	-	-	6	59	3	1	-	1	-
18th "	48	-	-	4	34	6	-	1	3	-
19th "	12	-	-	-	11	1	-	-	-	-
20th and over	16	-	-	-	12	2	-	2	-	-
Not stated	13	-	-	-	-	11	-	-	2	-
40-44 years	**13,602**	**110**	**656**	**702**	**5,505**	**3,295**	**826**	**1,173**	**855**	**480**
1st child	342	2	14	12	94	128	19	19	22	32
2nd "	512	2	25	23	105	208	34	44	36	35
3rd "	648	9	30	20	117	262	47	57	63	43
4th "	837	9	38	25	153	309	55	101	76	71
5th "	985	10	46	34	222	351	81	104	94	43
6th "	999	10	42	38	266	342	74	97	77	53
7th "	1,049	12	50	62	312	276	72	125	89	51
8th "	1,171	8	72	59	425	300	75	89	99	44
9th "	1,143	8	57	70	449	278	70	93	80	38
10th "	1,192	12	72	72	522	254	61	123	63	13
11th "	1,113	12	61	65	575	178	73	89	35	25
12th "	1,067	7	51	62	577	142	70	86	52	20
13th "	790	1	26	66	498	99	31	45	23	1
14th "	643	3	36	43	394	68	27	46	20	6
15th "	459	3	15	20	318	41	19	27	13	3

TABLE 14. Order of birth of legitimate children born in 1931 (including stillborn children), by age of mother, Canada and provinces, 1931—Con.

Age Group of Mother and Order of Birth of Child	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
40-44 years—Con.										
16th child	265	1	12	16	183	25	7	14	6	1
17th "	166	1	3	9	126	9	8	8	1	1
18th "	94	-	4	2	79	7	2	-	-	-
19th "	50	-	1	4	37	2	-	3	3	-
20th and over	67	-	1	-	53	7	1	2	3	-
Not stated	10	-	-	-	-	9	-	1	-	-
45 years and over	**1,469**	**10**	**74**	**89**	**608**	**310**	**100**	**138**	**89**	**51**
1st child	27	1	2	1	7	9	2	1	-	4
2nd "	29	-	2	2	4	8	2	1	6	4
3rd "	64	1	2	3	19	19	8	6	1	5
4th "	62	-	1	2	16	25	4	9	3	2
5th "	79	-	4	3	18	26	9	11	6	2
6th "	75	1	3	5	19	23	6	5	8	5
7th "	95	2	4	8	28	30	3	8	7	5
8th "	109	-	5	3	33	25	8	17	10	8
9th "	105	1	7	10	37	22	6	12	8	2
10th "	141	1	10	6	57	31	11	16	6	3
11th "	128	2	4	10	55	24	10	12	7	4
12th "	134	-	8	14	62	22	7	9	9	3
13th "	99	-	5	6	47	17	8	8	6	2
14th "	104	-	5	7	57	13	7	10	5	-
15th "	73	1	9	2	46	4	4	3	4	-
16th "	58	-	1	4	36	9	1	6	-	1
17th "	26	-	1	1	18	2	-	2	1	1
18th "	27	-	1	2	21	1	1	1	-	-
19th "	19	-	-	-	18	-	1	-	-	-
20th and over	15	-	-	-	10	-	2	1	2	-
Age not stated	**307**	**9**	**5**	**3**	**16**	**232**	**2**	**4**	**24**	**12**
1st child	32	3	-	2	5	21	-	-	1	-
2nd "	17	-	-	1	-	7	-	1	7	1
3rd "	11	-	1	-	1	7	-	-	-	2
4th "	15	-	2	-	1	7	-	3	1	1
5th "	13	-	-	-	-	7	-	-	5	1
6th "	4	-	-	-	-	2	-	-	2	-
7th "	4	-	-	-	-	2	-	-	-	2
8th "	1	-	-	-	-	-	-	-	1	-
9th "	1	-	-	-	-	-	-	-	1	-
10th "	1	-	-	-	-	1	-	-	-	-
11th "	1	-	-	-	-	-	-	-	-	1
12th "	1	-	-	-	-	1	-	-	-	-
Not stated	206	6	2	-	9	177	2	-	6	4

APPENDICES

APPENDIX I

FORM 1

SEVENTH CENSUS OF CANADA, 1931

Population

Province.....Electoral District.....Subdistrict No.....
(Write name and number.)

in municipality of.....
(Insert name and state whether city, town, village or rural municipality.)

Number in the order of visitation		Name and Residence		Description of Home					
Dwelling house	Family, household or institution	Name of each person in family, household or institution	Place of Abode (In rural localities give parish or township. In cities, towns and villages, give street and number of dwelling)	Home owned or rented	If owned, give value. If rented, give rent paid per month	Class of house (See instructions)	Materials of construction (See instructions)	Rooms occupied by this family	Has this family a radio?
1	2	3	4	5	6	7	8	9	10

Personal Description				Place of Birth			Immigration		Nationality and Racial Origin	
Relationship to head of family or household	Sex	Single, married, widowed, divorced	Age at last birthday	Country or place of birth of this person and of parents of this person. If born in Canada give province. If foreign-born give country. (See instructions)			Year of immigration to Canada	Year of naturalization	Nationality (Country to which this person owes allegiance)	Racial origin
				Person	Father	Mother				
11	12	13	14	15	16	17	18	19	20	21

Language			Religion	Education		Occupation and Industry			
Can speak English	Can speak French	Language other than English or French spoken as Mother tongue	Religious body, Denomination or Community, to which this person adheres or belongs	Can read and write	Months at school since Sept. 1, 1930	Occupation: Trade, profession or particular kind of work, as carpenter, weaver, sawyer, merchant, farmer, salesman, teacher, etc. (Give as definite and precise information as possible)	Industry: Industry or business in which engaged or employed, as cotton mill, brass foundry, grocery, coal mine, dairy farm, public school, business college, etc.	Class of worker	Total earnings in the past twelve months (Since June 1, 1930)
22	23	24	25	26	27	28	29	30	31

Unemployment								
If an employee, were you at work Monday, June 1, 1931?	If answer to previous question is NO, Why were you not at work on Monday, June 1, 1931? (For example, no job, sick, accident, on holidays, strike or lockout, plant closed, no materials, etc.)	Total number of weeks unemployed from any cause in the last 12 months	Of the total number of weeks reported out of work in column 34, how many were due to—					
			No Job	Illness	Accident	Strike or Lockout	Temporary Lay-off	Other causes. (See instructions 18d)
32	33	34	35	36	37	38	39	40

INSTRUCTIONS TO ENUMERATORS RELATING TO FAMILIES AND HOMES, 1931 CENSUS

46. Who are to be enumerated? This is the most important question for enumerators to determine; therefore, the following rules and instructions should be carefully studied.

47. Habitual home or usual place of abode. The Statistics Act provides that the population shall be enumerated under the **de jure system.** The literal meaning of the term **de jure** is "by right of law," "legally." For the purpose of the census, the home of any person shall mean the usual fixed place of abode of that person—that is where the person usually sleeps or dwells. When a young person has left his parents' home and obtained employment elsewhere the place where he usually stays while engaged in such employment should be considered his **usual place of abode,** and not his parents' residence even though he may still think of and refer to the latter as "home." (See Instructions 4, 50 and 62 and the "Absentee Family Card.")

48. Residents absent on Census day. In every case where members of a family or a household are temporarily absent from their home or usual place of abode, their names and records should be entered on the schedules, the facts concerning them being obtained from their families, relatives or acquaintances, or other persons able to give the information.

49. Persons to be enumerated as members of the family. While it is not possible to lay down a rule applicable to every case, the following persons should generally be included as members of the family:—

(*a*) Members of the family temporarily absent on the census day, either in foreign countries or elsewhere in Canada on business or visiting. (But a son or daughter permanently located elsewhere, or regularly employed elsewhere and not sleeping at home should not be included with the family.)

(*b*) Members of the family attending schools or colleges located in other districts. (But a student nurse who receives even a nominal salary should be enumerated where she is in training.)

(*c*) Members of the family who are ill in hospitals or sanitariums and whose period of absence is more or less known.

(*d*) Servants, labourers, or other employees who live with the family and sleep on the premises.

(*e*) Boarders or lodgers who sleep in the house.

(*f*) Sailors or fishermen at sea; lumbermen in the forest; commercial travellers on the road who are members of the family. (See Instruction 75.)

In many cases it is more than likely that the names of absent members of the family will not be given to the enumerator by the person furnishing the information unless particular attention is called to them. Before finishing the enumeration of a family the enumerator should in all cases, therefore, **specifically ask the question as to whether there are any absent members,** as described above, who should be enumerated with the family.

50. Domestic servants, etc. There is a probability that some persons may be counted in two places, and that others may not be counted at all, under the **de jure** system. A domestic servant, for example, may be reported at the home of her parents as a member of a family **de jure,** and she may also be reported as **de jure** of the family or household where she is employed; or if absent from her home for a comparatively long time, and in her present place of service for only a short time she may be left out of the enumeration altogether. The same thing may occur in the case of farm labourers and employees in other callings. **The enumerator is instructed to take all such persons where found at service—but not at the family home.**

51. Doubtful cases. Where there is a doubt as to whether the absent member of the family or household is temporarily removed to another part of the Dominion the enumerator should enter the complete record of such person on the Population Schedule No. 1 and write after the name in Column 3 **"Ab"** for absent, and at the same time make a record in Column 4 of present P.O. address. The entry in Column 3 in such cases should be made thus **"John Smith (ab)."**

52. Persons not to be enumerated. If the head of the family or household, or whoever gives the information, is in doubt concerning the intention of such persons to return and if they be absent twelve months or more, they are not to be enumerated on the Population Schedule, Form 1, the presumption being that they have settled elsewhere. **As a rule, therefore, the enumerator should not include with the family he is enumerating any of the following classes:—**

(*a*) Persons visiting with this family; in such cases the enumerator should fill and return as directed by Instruction 61 an "Absentee Family Card." (See 51, 62 and 189.)

(*b*) Transient boarders or lodgers at hotels or elsewhere who have some other usual or permanent place of abode.

(*c*) Persons who take their meals with this family, but lodge or sleep elsewhere.

(*d*) Servants, apprentices or other persons employed in this family and working in the home or on the premises but **not** sleeping there.

(*e*) Students or children living or boarding with this family in order to attend a college or school, but whose home is elsewhere.

(*f*) Any person who was formerly in this family but has since become the inmate of an asylum, almshouse, home of the aged, reformatory or prison, or any other institution of a similar kind; or

(*g*) Members of this family who have been away from home for twelve months or more.

53. Servants. Servants, labourers, or other employees who live with the family or sleep in the same house or on the premises should be enumerated with the family. (See Instruction 50.)

54. Construction camps. Members of railroad or other construction camps or of mining camps, which have a shifting population composed of persons with no fixed place of abode, should be enumerated where found.

55. Inmates of Prisons, Asylums and Institutions other than medical hospitals. If there is in an enumerator's area a prison, reformatory, jail, penitentiary, almshouse, asylum, or hospital for the insane, home for orphans, home for the blind, a home for deaf and dumb, a home for incurables, an institution for feeble-minded, a soldier's home, a home for the aged or any similar institution, in which persons usually remain for long periods of time, inmates of such institutions should be enumerated by the enumerator appointed for the subdistrict unless the institution is made a separate enumeration area and its census provided for as directed in Instruction 9.

It is specially to be noted that in the case of jails, the prisoners should be there enumerated, however short the term of sentence. **The name of the home address of such persons must be entered in Column 4.**

74. Column 2: Number of Family, household or institution in order of visitation. In Column 2 the families or household should be numbered in the order in which they are enumerated entering the number opposite the head of the family. As in the same house there may be one or more families or households the numbers will not necessarily correspond with the dwelling house. For example, if there are four families in dwelling house number "1" consequently in dwelling house number "2" the first family visited will be family number "5." (See Specimen Schedule.)

75. Family defined. In a restricted sense of the term a family consists of parents with sons and daughters in a living and housekeeping community. For census purposes it has a somewhat different application from what it has in popular usage. It means a group of persons living together in the same dwelling house. The persons constituting this group may or may not be related by ties of kinship, but if they live together forming one household they should be considered as one family. Thus a servant who sleeps in the house or on the premises should be included with the members of the family for which he or she works. Again, a boarder or lodger should be included with the members of the family with which he lodges; but a person who boards in one place and lodges or rooms in another should be returned as a member of the family at the place where he lodges or rooms.

76. It should be noted, however, that two or more families may occupy the same dwelling house without living together. If they occupy separate portions of the dwelling house and their housekeeping is entirely separate, they should be returned as separate families and the number of rooms occupied by each family reported in Column 9. (See Instruction 99.)

77. Families in apartment houses or flats. In an apartment or a tenement house or flat there will be as many families as there are separate occupied apartments, or tenements or flats.

78. Boarding-house families. All the occupants and employees of a boarding house or lodging house, if that is their usual place of abode, make up, for census purposes, a single family.

79. Families in hotels. All the persons returned from a hotel should likewise be counted as a single "family," except that where a family of two or more members (as a husband and wife, or a mother and daughter) occupies permanent quarters in a hotel (or an apartment hotel) it should be returned as a separate and distinct family, leaving the "hotel family" as made up principally of individuals having no other family relations.

80. Institutional families. The officials and inmates of an institution who live in the institution building or buildings form one family. But any officers or employees who sleep in detached houses or separate dwellings containing no inmates should be returned as separate families.

81. Persons living alone. The census family may likewise consist of a single person. Thus, an employee in a store who regularly sleeps there is to be returned as a family and the store as his dwelling place or a person occupying a house or apartment alone is also to be returned as a family.

NAME AND RESIDENCE

82. Column 3: Name of each person in family, household or institution. The names of every person whose usual place of abode on June 1, 1931, was with the family or in the dwelling house for which the enumeration is being made are to be entered in the following order, namely: Head, first, wife, second, then sons and daughters in the order of their ages, and lastly, relatives, servants, boarders, lodgers or other persons living in the family or household. The persons in an institution may be described as officer, principal, inmate, patient, prisoner, pupil, etc.

83. How to write names. The last name or surname is to be written first, then the given name in full. Where the surname is the same as that of the person in the preceding line it should not be repeated.

84. Column 4: Place of abode. In the case of a city, town or incorporated village the enumerator will enter the number of the house and the street in this column. In the case of rural districts, the name of the township, lot, parish, or cadastral number will be entered in Column 4.

Provided, however, that in Manitoba, Saskatchewan and Alberta, the Section, Township, Range and Meridian and in some cases the Parish, will be entered in this column.

TENURE AND CLASS OF HOME

85. Column 5: Home owned or rented. This question is to be answered only opposite the name of the head of each family and refers to the home in which the family is living at the date of the Census. If the home is **owned** write "O," if the home is **rented** write "R." Make no entries in this column for the other members of the family. (See note at foot of this column on population schedule.)

86. If a dwelling is occupied by more than one family it is the home of each of them, and the question should be answered with reference to each family in the dwelling. The whole dwelling may be owned by one family and a part rented by the other family.

87. Definition of owned home. A home is to be classed as "owned" if it is owned wholly or in part by the head of the family living in the home or by the wife of the head, or by a son, or a daughter, or other relative living in the same home with the head of the family. It is not necessary that full payment for the property should have been made or that the family should be the sole owner.

88. Definition of rented home. Every home not owned either wholly or in part, by the family living in it should be classed as rented, whether rent is actually paid or not.

89. Column 6: If owned give value. If rented give rent paid per month. If the home is owned as indicated by the letter "O" in Column 5 the enumerator will enter in Column 6 opposite the line for the head of the family as nearly as it can be ascertained the current or **actual market** value of the house. This estimate should represent the amount for which the house would sell under ordinary conditions, not at forced sale.

90. If the home is rented as indicated by the entry "R" in Column 5 the amount of rent paid each month should be entered in Column 6, opposite the name of the head of the family. In the case of "free tenants" such as clergymen, janitors, hired men, etc., the estimated value of the monthly rental based on local conditions should be given. The rent entered in this column **should be the rent paid for the month of May, 1931,** and should include only the rental paid for the house or part of house occupied as a home. If the monthly rental includes a store or shop the rental value of said store or shop should be deducted from the rent, before entering it in Column 6.

91. Column 7: Class of home. Opposite the name of the head of the family state whether the home of the family whose Census is being taken is situated in an "Apartment," "Flat," "Row or Terrace," or is a "Single" or "Semi-detached" house, or is in a "Hotel" or "boarding-house."

92. Home in a single or detached house. A single house refers to a self-contained house occupied as a separate dwelling and will be entered in Column 7 by the letter "S."

93. Home in a semi-detached house. A semi-detached house means two separate and distinct dwellings, with separate entrances, under one roof with partition walls running through it from cellar to attic and making of each part a "whole house." This kind of house will be entered in Column 7 by the letter "D."

94. Home in an apartment. A home in an apartment house is one in which the house-keeping is self-contained and the family does not occupy any portion in common with another family and the entry in this column will be for apartment by writing the letter "A." (See Instruction 71.)

95. Home in a row or terrace. A home in a row or terrace will be entered in this column by the letter "R."

96. Home in a flat. A home in a flat is fully described in Instruction 72 and is to be described in Column 7 by the letter "F."

97. How entries are to be made in Column 7, summarized. Entries will be made to indicate each class of house in Column 7, as follows:—(See also note at foot of Schedule No. 1.)

"Single house" by the letter "S."
"Semi-detached" house by the letter "D."
"Apartment" house by the letter "A."
"Row or Terrace" by the letter "R."
"Flat" by the letter "F."

98. Column 8: Materials of construction. The enumerator will indicate the principal materials of the exterior walls of the house in the following manner; thus the entry "S" would signify stone house; "B" would signify brick house; "W" would signify wooden house. The initials "b.v." will indicate brick veneered; "p.l." plastered with lime mortar (on the exterior) "p.c." plastered with cement mortar (stucco). For houses constructed of cement blocks or of concrete, the abbreviation "c.b." will be used. (See also foot of Schedule No. 1.)

99. Column 9: Rooms occupied by this family. Enter in Column 9 the number of rooms occupied by this family for living purposes. The entry must be made in the line opposite the head of the house. In the case of a hotel or boarding house the total number of rooms in the house should be entered opposite the head of said hotel or boarding house. If, however, a family occupies permanent quarters in a hotel or boarding house for living purposes, the number of rooms occupied by it for exclusive family purposes should be entered in Column 9 on the line opposite the name of the head of the family, and the number of rooms thus occupied as a private residence deducted from the total number of hotel rooms used for general purposes. For example, if a hotel contains 100 rooms and a private family occupies permanently 10 rooms the number 10 will be entered opposite the head of the private family and the number 90 opposite the name of the head of the hotel family. (See Instruction 79.)

100. Column 10: Has this family a radio? This question will be answered by writing "yes" for every family which has a radio set and "no" for every family which does not possess one. The entry in Column 10 will be made opposite the name of the head of the family irrespective of the ownership of the instrument.

101. Column 11: Relationship to head of family or household. The head of the family or household, whether husband or father, widow or unmarried person of either sex, is to be designated by the word "Head" in Column 11, and the other members of the family as wife, father, mother, son, daughter, grandson, daughter-in-law, uncle, aunt, nephew, niece, partner, boarder, lodger, servant, etc., according to the relationship which the person bears to the head of the family. Persons in an institution may be designated as officer, inmate, patient, pupil, prisoner, etc., and in the case of the Chief Officer his title should be used as Warden, Superintendent, Principal, etc. If the husband and wife, the father and children, or mother and children are boarding they constitute a family and it should be indicated in this column with a bracket. (See Specimen Schedule lines 49, 50.)

102. Column 12: Sex. The sex will be denoted by "M" for males and "F" for females.

103. Column 13: Conjugal condition. The description in Column 13 will be given by the use of the initial letters, "S" for single person, "M" for married, "W" for widowed (man or woman) and "D" for divorced. Married persons who are legally separated, **not divorced**, or separated only as to bed and board will be described as married by the letter "M."

APPENDIX II

METHODS OF ANALYSIS

Parameters of the Frequency Distribution.—In summarizing mass data it is necessary for us to employ certain numerical indices of dimensions small enough to be grasped by the human mind. For example, the information that in 1931 there were 2,252,729 ordinary households in Canada containing 10,015,779 persons would tell us little about family size if we were not able to calculate the average persons per household, 4·45. Such indices have been called *statistics* by R. A. Fisher and the term seems to be an apt one. It might be well to describe briefly the *statistics* which are used again and again in this monograph and most other statistical treatises.

Annual income of 11 heads of families:—

Annual Income	Number of Heads with Given Income	Annual Income	Number of Heads with Given Income
$ 650	1	$ 1,450	1
850	1	1,650	2
1,050	2	10,050	1
1,250	3		

A table such as the one above that gives the annual income of 11 family heads is called a *frequency distribution.* Even though it is a very simple table dealing with a small number of heads we feel the need of condensing the information by the use of two or three summary indices. The most familiar and perhaps the most useful of all statistics is the *arithmetic mean* or *average.* The average earnings of each head in the above table were $2,013.64. When we speak of the income of the average man we generally have in mind the typical man but it is apparent that, in the above distribution, the earnings of the typical man were far below the average. This was apparently due to the weight of the income of the one man who earned $10,050 since the average income for the remaining ten was only $1,210. Although when we are dealing with large frequency distributions, the average is never distorted so radically by individual cases, these end values often have a heavy weight in determining it. Average earnings for all classes of the population are always raised considerably by the earnings of those who earn more than $10,000, even though they comprise a small group. The average size of the family is appreciably larger in a locality where there are a few very large families than in one without any very large families, even though the typical size may be the same in both cases. Consequently, we must always be careful in interpreting the significance of averages.

In the case of the above distribution, the *median* would give a better measure of mean income than the arithmetic average. If 11 soldiers were lined up with the tallest on the right and the shortest on the left the median height for the squad would be the height of the sixth or midmost soldier. It is easily seen that the median income for the heads in our sample is $1,250. The median has not been unduly influenced by the income of the man earning $10,050 and, consequently, provides a better indication of typical earnings than did the arithmetic mean. In the example given, the median would be $1,250, for if the incomes were individually arrayed by heads this would be the middle (sixth) item.

The *mode,* derived from the French word *La Mode,* is the most commonly occurring or 'fashionable' value in the frequency distribution. In our example the modal income is also $1,250. The chief disadvantage of the mode is that in the case of irregular distributions, its determination must rest on a somewhat arbitrary basis.

When summarizing the data of frequency distribution we are interested not only in the mean of the values but also in how they are scattered about the mean. Take the case of the earnings of two groups of 3 men each.

First Group		Second Group	
Earnings	Deviation about Mean	Earnings	Deviation about Mean
$ 500	−1,000	$1,000	−500
1,500	0	1,500	0
2,500	+1,000	2,000	+500

In both cases the mean earnings are identical although the distributions are quite different since the variability or *dispersion* of the earnings for the first group is much greater than for the second. The difference between any value and the arithmetic mean of the distribution is called the *deviation* of the value. The dispersion for a distribution is generally measured by its *variance*, or the square root of the variance which is called the *standard deviation.*

To obtain the variance we add the squares of the deviations and divide by the number of cases. For example, the variance and standard deviation in earnings for the first group of men is obtained as follows:—

$$\text{Variance} = \frac{\text{Sum of squares of deviations}^*}{\text{number of cases}} = \frac{(-1{,}000)^2 + (0)^2 + (1{,}000)^2}{3} = 666{,}667.$$

$$\text{Standard deviation} = \sqrt{666{,}667} = 817.$$

The standard deviation is a measure of absolute dispersion, not of relative dispersion. Suppose we wish to compare variability in the speeds of 3 horses with that in the speeds of 3 automobiles and the speeds of the horses and automobiles, respectively, were as follows:—

Horses—	5 miles per hour	Automobiles—60 miles per hour
	8 " " "	65 " " "
	11 " " "	70 " " "

The standard deviation in speeds for the horses works out at 2·45 m.p.h. and for the automobiles at 4·08 m.p.h. It is contrary to common sense, however, to say that the relative variability in the speeds of the cars was greater than that in the speeds of the horses. Relative dispersion may be measured by the *coefficient of dispersion* which is obtained by dividing the standard deviation of the distribution by its arithmetic mean. In the above example the coefficients of dispersion in the speeds of the horses and automobiles, respectively, were 0·31 and 0·06.

Correlations.—Much of statistical investigation is devoted to the study of interrelationships between two or more sets of data. Let us consider the following table relating the number of persons per household to the number of rooms occupied.

X Persons per Household	Y Rooms per Household
1	2
3	3
4	5
5	7
5	6
6	7
8	8
8	10

It is apparent that size of family and size of house are interdependent since the size of the house tends to increase with the size of the family. The coefficient of correlation has been derived to measure relationships of this kind.

Y Persons per Household	$(Y - \bar{Y})$ Deviations about Mean	$(Y - \bar{Y})^2$ Squares of Deviations	$\bar{X}$ Rooms Occupied	$(X - \bar{X})$ Deviations about Mean	$(X - \bar{X})^2$ Squares of Deviations	$(X-\bar{X})(Y-\bar{Y})$ Products of Deviations
1	−4	16	2	−4	16	+16
3	−2	4	3	−3	9	+ 6
4	−1	1	7	+1	1	− 1
5	-	-	5	−1	1	-
5	-	-	6	-	-	-
6	1	1	7	+1	1	+ 1
8	3	9	8	+2	4	+ 6
8	3	9	10	+4	16	+12
40	-	40	48	-	48	+40

*It may easily be shown that the sum of the squares of the deviations is a minimum when the deviations are taken about the arithmetic mean of the distribution.

The average persons per household is 5 and the average rooms per household 6. The second and fourth columns of the above table give the deviations of the values about their mean and the third and fifth columns the squares of the deviations. Statistical discussion may he shortened by referring to variables in terms of algebraic symbols. In the above table we may indicate the numher of persons per household hy Y and the numher of rooms occupied hy X. The arithmetic means of the two variables may then be referred to by $\overline{Y}$ and $\overline{X}$, respectively, the deviations of the values by $(Y - \overline{Y})$ and $(X - \overline{X})$ and the squares of the deviations hy $(Y - \overline{Y})^2$ and $(X - \overline{X})^2$. The standard deviations of the two sets of data may be symbolized by σ_y and σ_x. The number of items correlated, 8 in this case, is generally referred to by the letter N.

$$\text{Then } \sigma_y \text{ (standard deviation in persons per household)} = \sqrt{\frac{40}{8}} = \sqrt{5}$$

$$\sigma_x \text{ (standard deviation in rooms per household)} = \sqrt{\frac{48}{8}} = \sqrt{6}$$

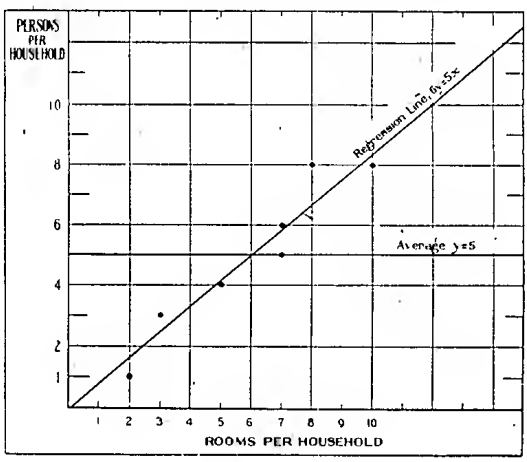
The last column of the tahle gives the products of the deviations. Now it is ohvious that if size of house is closely related to size of family the deviations in the two variahles for each family will tend to be of the same sign with the result that their products will generally he positive while if there is an inverse relationship hetween the two variahles the deviations will tend to he opposite in sign so that their products will generally he negative. The degree and direction of the relationship between two sets of variahle quantities is, consequently, indicated by the sum of the products of the dcviations of the quantities about their arithmetic means. The coefficient of correlation is generally symholized hy r with subscripts to denote the variables correlated. The formula for the *Pearsonian coeffi cient of correlation* is as follows:—

$$r_{xy} = \frac{\dfrac{(X - \overline{X})\,(Y - \overline{Y})}{N}}{\sigma_x\,\sigma_y}$$

The numerator of the ahove ratio is called the product moment for the two sets of data. The reader will easily comprehend why the product moment is divided hy the standard deviations of each variahle since its magnitude will ohviously depend on the dispersion of the two sets of data irrespective of the degree of relationship existing hetween them. The correlation for our sample data may he calculated as follows:—

$$r_{xy} = \frac{\dfrac{40}{8}}{\sqrt{6}\,\sqrt{5}} = \frac{5}{\sqrt{5}\,\sqrt{6}} = \sqrt{\frac{5}{6}} = \cdot 9.$$

The Pearsonian coefficient of correlation is never greater than 1 or less than -1. A correlation of unity indicates a perfect relationship between the two sets of data so that a correlation of ·9 is very high and is seldom met with in sociological data. It is not wise to attach much weight to correlations ohtained from distributions where the total number of items is as small as in our example, since the relationship may be accidental. In calculating correlations where the number of items is large and the mean is not an integer it is generally advisable to employ short-cut methods hut these will not he discussed herc. The reader may study them from any elementary text book on statistics.



Thc meaning of the coefficient of correlation is hest interpreted through its square. In the accompanying diagram the numher of persons living in each household has heen plotted against the numher of rooms occupied. The vertical spaces represent the numher of persons in the household and the horizontal spaces the number of rooms occupied. The horizontal line is drawn through 5, the mean persons per household. It is not difficult to see that the mean of the squares of the distances of the points from this line will coincide with the variance in persons per

household. The diagonal line represents the regression equation relating the number of persons per household to the number of rooms occupied. This equation may be derived from the following formula:—

$$\frac{y - \bar{y}}{\sigma_y} = r_{xy}\frac{x - \bar{x}}{\sigma_x}$$

Substituting the values for our example we obtain the following equation:—

$$\frac{y - 5}{\sqrt{5}} = \sqrt{\frac{5}{6}}\,\frac{x - 6}{\sqrt{6}}$$

Simplifying, $6y = 5x$.

The means of squares of the distances of the points from this line (measured parallel to the y axis) are obviously much less than the means of the squares of the distances from the horizontal line. The former may be derived from the latter from the following formula: $Sy^2 = Oy^2\,(1 - r^2) = 5\left(1 - \frac{5}{6}\right) = \frac{5}{6}$. The square of the coefficient of correlation evidently measures the fraction of the variance in family size which may be associated with size of house.

The usefulness of this device will become apparent when we are analysing the influence of various population attributes on average family size. Suppose we have the averages for family size in a number of localities. How much of the variance in the averages can be associated with the percentages of the populations of the localities of French racial origin? In order to answer this question we obtain the coefficient of correlation between the two variables and square it, obtaining the fraction of the variance in average family size which can be attributed to varying proportions of French Canadians in the localities.

Very often it is necessary to discuss interrelationships between more than two variables. For example, consider data for a number of localities giving average family size, percentage of population French, and percentage of population Roman Catholic. The three variables may be referred to by the symbols x, y, z, respectively. There will be correlations between all three. Now part of the correlation between average family size and percentage of population French-Canadian may be due to the fact that a large proportion of French Canadians are Roman Catholics. The *partial coefficient of correlation* between average family size and percentage of population French-Canadian, when the percentage Roman Catholic is held constant, measures the relationship between the first two variables—independent of the latter. It may be derived from the following formula:—

$$r_{xy \cdot z} = \frac{r_{xy} - r_{xz}\,r_{yz}}{\sqrt{1 - r^2_{xz}}\;\sqrt{1 - r^2_{yz}}}$$

In the symbol for the partial correlation, the first two subscripts denote the variables correlated and the subscript or subscripts following the period denote the variables held constant. Similar formulae have been developed for partial correlations when more than one variable is held constant.

The multiple coefficient of correlation measures the total correlations between a dependent variable and several independent variables.

The *statistics* discussed above are those which have been used most frequently in this monograph. A more thorough treatment may be found in any elementary text book in statistics.

FERTILITY OF THE POPULATION OF CANADA

by

W. R. Tracey

SUMMARY

COMPLETENESS OF BIRTH REGISTRATION

Chapter I, which investigates the completeness of the registration of births, establishes a conviction that the registration of births is satisfactorily complete. By "satisfactorily" is meant that such incompleteness as exists is not sufficient to cause any serious misinterpretation of the data. This is illustrated in Statement VIII which shows the consequences of certain (assumed) degrees of incompleteness. The evidence collected elsewhere in the chapter, while not exactly measuring the degree of completeness, points strongly to the conclusion that it is within the limits of serious consequences. Two criteria were used in the investigation: (1) a sample of children appearing in the census at ages suitable for comparison with Vital Statistics records was traced through these records; (2) the total number alive at the census was compared with the number expected for the record period. It is obvious that the case of any child shown in the census as being born in the province while in reality he was born in a hospital in another province and recorded as born in that province would not be found in the Vital Statistics records; moreover, misstatement of age at the census would prevent his appearance in the records where he was expected to appear. Furthermore, any change in the name or habitat of the parent or child might make it impossible to trace back from the census to the registration records. Furthermore, it is impossible to make the search through the records exhaustive. It follows that the degree of completeness ascertained by this method is well below the degree actually achieved. This becomes more apparent when it is actually found that the more exhaustive the search the greater the degree of completeness ascertained.

THE TREND OF THE CANADIAN BIRTH RATE IN THE POST-WAR PERIOD

Chapter II shows that in Canada as a whole and in each of the nine provinces there has been a marked decline in the number of births over the last ten years. The decline persists after allowances are made by means of recognized methods of standardization for age of mother and the conjugal condition of the population. However, any conclusions as to future trends should be expressed with reservations. The necessity for such reservations is implicit in the complexities revealed in the next chapter in the data on order of birth. Some important conclusions, however, are arrived at in Chapter II. A period of definite decline, *viz.*, from 1921 to 1936, was established. Although this cannot be regarded as a prognostication of the future, it is a point in history, and the history also is one of depression. It is impossible to establish the effect of this depression fully but its direct influence is clearly seen. A calculation of the effect of different factors upon the crude birth rates during this period shows that the age distribution of married mothers within the child-bearing age range becomes more and more unfavourable; also, the proportion illegitimate of the total births increased (this may be an outcome of the depression). However, a favourable factor emerged, *viz.*, the proportion of females of child-bearing age increased. The specific birth rate of married women declined 15 p.c. in the decade.

ORDER OF BIRTH

Chapter III on order of birth is highly illuminating, as containing data which deal with the past records of the mothers appearing in the birth statistics of each year. There are many trends appearing in these data, some of which are complicated too much by unavailable factors to measure. However, some points stand out quite clearly. The increases and decreases in the number of births occurring each year are closely associated with types of mother. In the decade for which orders of births are tabulated (1927-1936), the first and second births have, on the whole, shown increases, and yearly increases and decreases have been closely associated with the trend of marriages. Beginning with the third there has been a progressive decline in the importance of each order, the greatest decline is reached in the fifth order after which there is a progressive lessening of this decline until after the tenth order when a stationary condition is reached. This is illustrated in Chart 12, page 282. The trend of decline, then, affects chiefly mothers with

moderately large families, the extremely large and extremely small showing increases. This trend is present in more or less modified form in the different age groups of mother. What seems to be a very important feature in the decline is the disappearance of the unusual type of mother. Thus the modal ages in 1927 for the first and second orders are 20-24, for the third, fourth and fifth are 25-29, for the sixth, seventh and eighth are 30-34, for the ninth to the thirteenth are 35-39, for the fourteenth and over are 40-44. It is remarkable that on the whole (exeept slightly in the case of first births or orders higher than fourteenth) the modes remained rather steadier than the remainder, but showed a trend of inereasing importanee relative to the whole as time went on. This is shown in the statement below. It would seem to indieate that for the third to the thirteenth orders of birth, the ehanges that are taking place are in the unusual elements, *i.e.*, where a high or a low order of birth oecurs at an unusual age, *e.g.*, it is very uncommon for a mother 20-24 years of age to show an order of birth higher than the sixth. In 1927, mothers in this group showed 248 births higher than the sixth order, in 1936 they showed only 173, a deerease of more than 30 p.c. If it is true that the disappearance of unusual types of mothers is an important element in the decline in births, this may have an important bearing on stabilizing future birth rates. Onee the unusual is eliminated, the usual may not only show a steady birth rate but even a possible inerease.

Modal Births				Numerieal Increase, 1927-36, in		Percentnge Inerease, 1927-36, in	
Order of Birth	Average Age of Mother	Number		Modal Births	Total Births of Order	Modal Births	Total Births of Order
		1927	1936				
All orders	.....	94,474	88,424	−6,050	−16,669	− 6·4	− 7·1
1st- 2nd	20-24	38,794	40,760	1,966	6,212	5·1	6·9
3rd- 5th	25-29	29,496	25,679	−3,817	−11,702	−12·9	−14·7
6th- 8th	30-34	14,242	11,741	−2,501	− 7,304	−17·6	−19·2
9th-13th	35-39	10,090	8,681	−1,409	− 3,408	−14·0	−15·2
14th and over	40-44	1,852	1,563	− 289	− 467	−15·6	−13·4

GROSS AND NET REPRODUCTION RATES

Chapter IV shows gross and net reproduction rates, *i.e.*, the number of femalc children expected from the individual female in the population on the basis of current birth rates. Except in one province, British Columbia, the reproduction rates are sufficiently high to maintain a steady inerease in population, while the province of New Brunswick shows a very high rate, indeed sufficiently high to give a population which would be large even in the whole of Canada in ten generations—if, of course, this reproduction rate is maintained. Even for thc other provinces, unless the birth rate continues to decline, there is very little danger of shortage. Ontario, the lowest except British Columbia, shows a net reproduction rate of 1·13 in a generation. In ten generations (about 240 years) this would mean more than trebling the present population.

RACIAL DIFFERENCES IN FERTILITY

Chapter V studies differential fertility from the standpoint of racial origin. Three eonclusions on the basis of this study would seem to be outstanding: (1) that declines are characteristic of all races; (2) that the race differential is not very large, and (3) this differential is not particularly due to the same races occupying the same position in the scale of decline. This last is seen particularly in studying the orders of birth by race. The British, although showing low rates and steady declines are exchanging places with certain other races in the scale of low rates.

One particularly interesting feature is disclosed by a study of race fertility. Although up to the present the different races have not intermingled to a great extent, yet when the process is studied over the 16 years from 1921 to 1936, it is seen that the rate of intermingling has been beeoming increasingly rapid, the percentage of total births having the mother of one origin and the father of another nearly doubling in the period. Of course, it is easy to understand this, since the period 1921-36 was as long as from 1906 to 1921 and during the earlier period these races were coming in. Suеh of them as were married before they eame would naturally be of the

same origin, man and wife, while the earlier marriages in Canada when their races were stronger would naturally be among themselves. The intermingling of French and other races does not seem to be nearly as rapid but this is also easily understood. It is not necessarily a question of propensity at all but a question of propinquity. The French are largely in Quebec and a Frenchman would have to go out of his way to find a wife of a racial origin other than French. This is probably due to the growth of cities with the consequent conjugation of different races as well as to immigration to the newer towns of Quebec. There has been an actual increase in the last ten years in the proportion of French mothers with fathers of a different race.

DIFFERENCES IN FERTILITY ACCORDING TO BIRTHPLACE OF PARENTS

From the differential fertility by birthplace we have revealed a feature not shown in race fertility; at least, not directly, *i.e.*, the effects of immigration. Chapter VI shows the proportion of births due to immigration is becoming rapidly smaller. It is amazing how rapidly the process of becoming indigenous proceeds. The Prairie Provinces are an outstanding example. In the case of Canada as a whole, the proportion with father and mother from the same province is increasing rapidly. The number of cases where the father is born in one province of Canada and the mother in another has also increased rapidly, *e.g.*, we have the case of 1,749 births to Alberta-born mothers in 1936 as compared with 543 in 1926. The number of births to immigrant parents decreased from 70,573 (in the Registration Area) in 1921, to 35,999 in 1936; while the births to Canadian-born parents increased from 95,549 to 108,885 in the same period. The increase in proportion of births where both parents are born in the province indicates a static condition of the population. We do not know whether or not this is a temporary phase arising from the depression; and we can only surmise its bearing upon the recent decline in total births.

REGIONAL DIFFERENCES IN FERTILITY

Chapter VII shows from four points of view the birth rates of the different regions of Canada: (1) as between different sized cities and rural or small city parts; (2) as between 227 divisions of Canada when all urban centres are included; (3) as between the same divisions when cities and towns of 5,000 and over are excluded; (4) as between the divisions of (3) corrected for the influence of race and religion. Three maps illustrate or locate the regional differences shown in 2, 3 and 4. This regional study seems to point to definite conclusions. The influences of race (French) and religion (Roman Catholic) are strong but not nearly as strong as might be expected. The major influence would seem to be age of settlement and density of population, the older and denser settlements showing the low, and the new and sparsely settled the high birth rates. Dividing the birth rates into seven classes in descending order, as shown on the maps, there is a marked continuity to each class from the standpoint of latitude. There seems to be a graduation from the higher classes in the higher to the low in the lower latitudes. Special cases appearing as exceptions are usually, if high, associated with sparsity of settlement and if low, with age of settlement or emigration. Thus an almost continuous block of counties (exclusive of cities and towns of 5,000 and over)—Kings, P.E.I., Inverness, Victoria, Richmond, Antigonish and Pictou, N.S.—when corrected for race and religion, are in the lowest class. Emigration and especially recent emigration from these places has been exceptionally heavy. Emigration takes place at the most marriageable ages, especially for females, and female emigration from these places has been very heavy. Indeed, in other exceptionally low places such as Divisions Nos. 9 and 10, B.C., another phase of the same thing is seen. There the masculinity of the population is particularly great and there is throughout the divisions a correlation between high masculinity and low birth rates. Now that emigration is no longer heavy it will be interesting to watch the birth rates in these regions of exceptionally low rates.

Taking rural and urban centres, it is noticeable that there is a graduation of birth rates from 24·1 in rural parts and urban centres under 5,000, 24·7 in cities and towns 5,000-10,000 and 23·3 for cities and towns 10,000-40,000, to 20·8 in the cities of 40,000 and over. In spite of this graduation, it is noticeable (see Maps 3 and 4) that the exclusion of cities over 5,000 does not usually cause a raising of the birth rates in the counties where they are excluded. Wentworth county exclusive of cities over 5,000 shows a lower birth rate than when these cities

are included. It should be mentioned that the suburban parts of cities are tabulated as "rural" and if the suburbs happened to be more sterile than the main city, the results shown in Maps 3 and 4 in this respect would be at least partly explained. The crude birth rates to which reference is made almost exclusively in this chapter are calculated on the basis of the total population. Consequently, if it happened that older and retired persons tend to go to the suburbs and the small towns and villages, the birth rate would be lowered thereby. There is little doubt that in many of the smaller cities, towns and villages we have the situation that has just been described in connection with the counties of the Maritimes, *viz.*, heavy emigration to the large cities and elsewhere and probably a replacement of a young marriageable population by retired and *ipso facto* old population.

GENERAL COMMENTS

It will be interesting to watch the effect on the general birth rate of Canada as or if the people spread out more and more in the newer and more sparsely settled areas from the old and thickly settled. There is at least a suggestion that the last word has not yet been said about the process of declining birth rates. The economic conditions that led to a decline in marriage during the depression would seem to be reflected in first and second births; the elimination of the unusual was reflected in the other orders of birth; the process of passing through periods of very high to moderately low rates on the part of certain races; the false high points created by postponed marriages due to immigrants after years of pioneering marrying *en masse*—all these factors contributed in the direction of causing recent heavy decline in total births, some of them affecting even the specific age rates and consequently not allowed for by standardizing the birth rates. Whether the present situation is a passing through a cycle or a permanent trend remains to be seen when the period of observation by means of reliable vital statistics has been considerably lengthened.

PART I

GENERAL STATEMENT OF RATES AND TREND IN FERTILITY

CHAPTER I

COMPLETENESS OF BIRTH REGISTRATION

There is no available direct approach to the problem of the completeness of birth registrations and all the information that can be used for an indirect check is itself open to the charge of incompleteness. It should be understood that the findings of this chapter are not intended to give a final statement but, owing to the obvious bias of unmeasured factors, only to find the maximum of incompleteness. Setting an upper limit is, however, an important step.

Two ways of treating the problem present themselves. The first is to compare the census aggregates of persons aged 0, 1, 2, 3, etc., with the births of the preceding years, after making allowance for infant deaths. The second is to take a sample (since the amount of labour required for checking individual registrations is very great) of the persons alive at a given moment and find how many of the persons in the sample were registered at birth. Both of these methods have been used for each section of Canada and their results will be considered in this chapter.

COMPARISON OF VITAL STATISTICS AND CENSUS IN THE AGGREGATE

The more refined an analysis involving the census, the more such census inaccuracies as exist will tend to obscure the results. An analysis of the deficiencies of the birth records is perhaps the most delicate job the census may be called on to do.

Errors in the statement of age by the enumerated which result in a concentration on even numbers are indicated in Statement I below.

I.—RATIO OF THREE TIMES THE NUMBER OF PERSONS REPORTING AGE X TO THE TOTAL NUMBER REPORTING AGES $X-1$, X AND $X+1$, BY SEX, CANADA, 1931

Units Digit	Tens Digit									
	Males					Females				
	0	1	2	3	6	0	1	2	3	6
0	-	1·03	0·97	1·08	1·18	-	1·02	1·00	1·12	1·25
1	0·97	0·99	1·03	0·97	0·85	0·98	0·99	1·00	0·93	0·81
2	1·02	1·01	0·99	1·02	1·05	1·02	1·00	0·99	1·04	1·05
3	1·01	0·98	1·01	0·97	1·01	1·01	0·98	1·01	0·97	1·00
4	1·00	1·01	1·01	0·96	0·92	0·99	1·01	0·99	0·97	0·94
5	1·00	0·98	0·98	1·06	1·15	1·00	0·98	1·01	1·06	1·14
6	1·01	1·03	1·01	1·00	0·92	1·01	1·03	1·00	0·99	0·92
7	1·00	1·00	0·98	0·93	0·97	0·99	0·99	0·97	0·93	0·95
8	1·00	1·02	1·06	1·09	1·06	1·01	1·03	1·06	1·11	1·09
9	1·00	1·00	0·92	0·90	0·89	0·99	0·98	0·99	0·88	0·86

It is plain that the concentration at multiples of 2 and 5 shown in the ages 30-40 and 60-70 is relatively unimportant at ages 0-10. We may roughly say, in fact, that for both males and females this type of error increases with age. Concentration at even digits is probably the least harmful of the various types of errors for it can be largely removed by suitable graduation, since the excessive frequency at the even age consists of as many overstatements as understatements. This has been shown by a study of individual changes of age in a sample from two consecutive censuses.*

But, on the other hand, a phenomenon to be found in no other part of the statement makes its appearance at the youngest ages. Consider, for example, the 1931 population of Canada. The number given as age zero is 202,668.† The number three years of age is 224,131. Now, since immigration at very young ages is not an important factor, we must attribute this striking excess of those stated as 3 years old to one of two causes, (a) a decrease in the birth rate or (b) misstatements by the parents of the children enumerated in the census returns. These are discussed below.

* See Appendix 1, page 394.
† The census procedure is to take all ages in completed years.

(a) Since the death rate of the early years of life is heavy, there tends to be a sharply decreasing number alive from age to age in the first five years of life. Consider Canadian Life Table No. 1*, for example, where the population is assumed to be stationary at the level of 1931 deaths and a number of births just sufficient to balance those deaths, as quoted in columns 1 and 2 below.

II.—LIFE TABLE AND ACTUAL POPULATION, MALES AND FEMALES, CANADA, 1931

Age	Life Table Lx		Population	
	Males (1)	Females (2)	Males (3)	Females (4)
0	104,237	103,672	102,930	99,738
1	102,042	101,804	102,879	101,486
2	101,076	100,954	111,910	109,668
3	100,536	100,490	113,021	111,110
4	100,158	100,146	112,432	109,241
5	99,869	99,884	112,884	109,723
6	99,619	99,670	114,691	111,711
7	99,392	99,486	114,284	111,431
8	99,188	99,324	114,800	114,047
9	99,006	99,177	115,848	113,330
10	98,840	99,036	117,240	114,330

A very rapid dropping in the birth rate must be postulated to explain the divergence between the figures of columns 1 and 2 on the one hand and 3 and 4 on the other. The figures below show the population at the various ages and the birth and infant mortality rates of the corresponding calendar years. Since the population at age 0 on June 1, 1931, is the result of births for the period June 1, 1930-May 30, 1931, the applicable birth rate is somewhere between the 1930 and the 1931 figure, and similarly for the other years.

III.—BIRTHS, BIRTH RATES AND DEATHS UNDER ONE YEAR OF AGE, CANADA, 1920-1931

Age	Population	Calendar Year	Births	Birth Rate	Deaths under One Year of Age
		1931	240,473	23·2	20,360
0	202,668	1930	243,495	23·9	21,742
1	204,365	1929	235,415	23·5	21,674
2	221,578	1928	236,757	24·1	21,195
3	224,131	1927	234,188	24·3	22,010
4	221,673	1926	232,750	24·7	23,692
5	222,607	1925	242,388	26·1	22,310
6	226,402	1924	244,525	26·8	22,709
7	225,715	1923	240,476	26·7	24,833
8	228,847	1922	252,571	28·4	25,553
9	229,178	1921	257,728	29·4	26,280
10	232,180	1920	253,069	29·6	30,829

While the birth rate is seen to be dropping in the years 1926-31 the absolute number of births increases and infant mortality falls off. The increasing number of births and the falling infant mortality should intensify an age-to-age decrease in the 1931 population for the first five years of life. For the rise shown in the population from ages 5 to 10, however, there is at least a partial explanation in the fall of the births from 1920 to 1926—that fall being only partially counteracted by declining infant mortality.

(b) Mr. George King comments on the error of the census at younger ages in England, in the *Supplement to the 75th Report of the Registrar-General for England and Wales*. The procedure used for the construction of English Life Tables Nos. 6 and 7 was based on the assumption that the population enumerated in the census as ages 0-4 inclusive was correct in total, being merely wrongly distributed. The percentage distribution between the ages 0, 1, 2, 3, 4 used, therefore, was that obtained by calculating the number alive from the births and deaths of the immediately preceding years; the total to which this distribution was applied was that of the census.

*1931 Census Monograph No. 13.

But Mr. King did not think that this assumption was supported by facts. Says he,* "In each of the two tables relating to males and females, respectively, for the two Censuses of 1901 and 1911, and in each of the two similar tables for the single Census of 1911 there is a great deficiency in the infants enumerated in each of the first two years of life, and there is no corresponding excess in the young children aged from 2 to 4 last birthday, the number of such children being in close agreement with the numbers estimated from the births and deaths. It is true that emigration** disturbs a little the statistics based upon the births and deaths, and the effect of that disturbance is cumulative with increasing age." After showing that the census defect is not explained by emigration, he finishes, ". . . . the conclusion seems to be inevitable that a large number of infants under two years of age escaped enumeration at both the Censuses of 1901 and 1911, more especially so in 1911, although why that should be it is difficult to understand."

In 1916 Dr. J. C. Dunlop, Superintendent of the Statistical Department of the Registrar-General for Scotland, investigating deficiencies at ages 0-4 in the Scottish Census of 1911 by checking from census to birth certificates†, found that of the cases where identification was achieved (84 p.c. and 81 p.c., respectively, of the number enumerated in Paisley and Haddington, the two registration districts of the investigations), 7·5 p.c. showed misstatement of age. Of 898 incorrectly reported ages, 789 were overstated and 109 understated. In only 47 of the 898 instances were the errors more than one year in amount, however.

The census number of children, age 0, instead of being 2,780 was 2,646, *i.e.*, too small by 134 or 4·8 p.c. The census number at age 1 was 2·9 p.c. short; at age 2, 0·7 p.c. in excess; at age 3, 2·7 p.c. in excess. Dr. Dunlop's "Table A"‡ is interesting, as showing the extent of distortion that existed in a census generally considered to be very accurate.

DR. DUNLOP'S TABLE A.—SHOWING NUMBERS OF CHILDREN WHOSE AGES WERE TESTED BY REFERENCE TO BIRTH REGISTERS

Ages Found by Reference to Birth Registers	Ages as Stated in Census Returns					
	0	1	2	3	4	0-4
0	2,626	142	7	3	2	2,780
1	13	2,304	229	2	0	2,548
2	2	13	2,176	231	5	2,427
3	4	8	25	2,051	168	2,256
4	1	6	7	30	1,926	1,970
0-4	2,646	2,473	2,444	2,317	2,101	11,981

Dunlop's method of enquiry, *i.e.*, tracing individuals from the census to the Birth Registers, is obviously unable to show the existence of omissions from the census. But evidence presented in Appendix 1, page 192, on the basis of comparisons made between consecutive censuses, show that actual omissions at the younger ages of life are not of a magnitude great enough to affect materially the calculations to be made below.

There are two ways in which we may make comparisons between the birth registrations and the census using available tabulations.

Method 1.—Taking the figures for the number of births (both sexes) in each month and using a special table giving the number of deaths out of these births month§ by month, we can find the number attaining one year of age. Then we may use a life table with an l_x graduated by months to find the probability that a child of one year will survive to the census date. By adding up the numbers of those who were born in the appropriate months and who live to the census date we arrive at a figure that can be compared with the number of age 1, 2, 3 and 4 living at the census date. To compare births in the year June 1, 1930–June 1, 1931, with the population under one year of age at the latter date we merely subtracted from the births of the appropriate months the deaths among those births up to June 1.

Method 2.—Taking the figures for the numbers of births (both sexes) in each calendar year, we deduct an estimate of the number of deaths among those births constructed thus:—

* Loc. cit. p. 13.
** In Canada the corresponding force, immigration, would act in the opposite direction.
† *Journal of the Royal Statistical Society*, May 1916, p. 309
‡ Loc. cit., p. 315.
§ An unpublished table is made up in the Vital Statistics Branch of the Bureau, giving for the infant deaths of each year the distribution by month of birth and month of death.

For each province the number of persons dying in the calendar year of birth is found as a percentage of the total number dying under one year of age. This turns out to be somewhat between 70 and 80 p.c. in most cases. We take this percentage of the deaths of the first calendar year and the complementary percentage of those of the subsequent year. For the second year of life it is assumed in all cases that 60 p.c. of the deaths of children aged 1-2 in a given calendar year refer to children who reached their first birthday in that calendar year; for the third and subsequent years of life the deaths are assumed to be equally spread and 50 p.c. is taken.

Using one or both of these methods, the number of persons to be expected in the census was found for each of the first five years of age, the ratios were tabulated for the 1931 Census for the five regional divisions of Canada. It will be seen that the two methods of calculation give essentially similar results.

IV.—COMPARISON OF THE CENSUS POPULATION AGED 0, 1, 2, 3, 4, WITH THE NUMBER CALCULATED AS ALIVE AT THE CENSUS DATE AT THE SAME AGES FROM BIRTH REGISTRATIONS BY METHODS 1 AND 2, CANADA AND REGIONAL DIVISIONS, 1931

Regional Division	Census Year of Birth (June-June)	Age Last Birthday at June 1, 1931	Number Alive June 1, 1931 (Census)	Number Surviving June 1, 1931, Calculated from Births Registered		Ratio (Col. 4 : Col. 3)
				Method 1	Method 2	
	(1)	(2)	(3)	(4)	(5)	(6)
		years				
CANADA	1926-1931	0-4	1,072,730	1,066,157		0·99
	1930-1931	0	202,400	224,693		1·11
	1929-1930	1	204,048	217,480		1·07
	1928-1929	2	221,207	210,014	209,462	0·95
	1927-1928	3	223,760	210,720	209,606	0·94
	1926-1927	4	221,315	203,250	202,226	0·92
Maritime Provinces	1926-1931	0-4	109,990	104,080		0·95
	1930-1931	0	21,561	21,988		1·02
	1929-1930	1	20,569	20,809		1·01
	1928-1929	2	22,370	20,306	20,365	0·91
	1927-1928	3	22,901	20,901	20,706	0·91
	1926-1927	4	22,589	20,076	19,982	0·89
Quebec	1926-1931	0-4	352,895	357,835		1·01
	1930-1931	0	66,439	75,661		1·14
	1929-1930	1	65,541	72,410		1·11
	1928-1929	2	73,759	70,497	70,039	0·96
	1927-1928	3	74,427	71,027	70,537	0·95
	1926-1927	4	72,729	68,240	67,388	0·94
Ontario	1926-1931	0-4	307,669	317,069		1·03
	1930-1931	0	58,392	66,467		1·14
	1929-1930	1	58,887	64,624		1·10
	1928-1929	2	62,803	62,306	62,196	0·99
	1927-1928	3	63,931	62,709	62,657	0·98
	1926-1927	4	63,656	60,963	60,587	0·96
Prairie Provinces	1926-1931	0-4	250,197	238,168		0·96
	1930-1931	0	46,489	50,278		1·08
	1929-1930	1	49,034	49,559		1·01
	1928-1929	2	51,387	47,279	47,235	0·92
	1927-1928	3	51,721	46,550	46,274	0·90
	1926-1927	4	51,566	45,502	45,005	0·88
British Columbia	1926-1931	0-4	51,979	48,770		0·94
	1930-1931	0	9,519	10,299		1·08
	1929-1930	1	10,017	10,071		1·01
	1928-1929	2	10,888	9,637	9,627	0·89
	1927-1928	3	10,780	9,471	9,432	0·88
	1926-1927	4	10,775	9,302	9,264	0·86

For all of the five regional divisions the ratios for ages 0 and 1 are greater than 1·00, and for the subsequent ages less. This is a reflection of the overstatement of age in the census to which reference has been made in the foregoing pages. Though considerable regional variation appears in the ratios of column 6 for the total of ages 0-4, the 0·99 obtained for all of Canada appears to show satisfactorily the amount by which birth registrations are below the census, on the average, throughout the country.

Therefore, 0·99 is a maximum figure for completeness of birth registrations throughout the country. But, though this figure takes account of overstatements within the age group 0-4, it would be too high if there was a tendency for the ages of children to be stated as over 5 when they were actually less than 5. Such a tendency is indicated in the discussion in Appendix 1, page 394, hence it would be desirable to calculate the number to be expected at the census date at ages 5-9 on the basis of birth registrations. To do this for the 1931 Census would be unsatisfactory, in that it would require going back in the birth registration record to a period in which there was a registration area of only eight of the provinces, and further it would involve using registrations less complete than those of the more recent period. Hence, we have confined our calculations to the Prairie Provinces, making use of the 1936 Census. The statement below gives the results, which are graphed in Chart 1.

V.—COMPARISON OF THE CENSUS POPULATION AGED 0, 1, 2, 3, 4, WITH THE NUMBER CALCULATED AS ALIVE AT THE CENSUS DATE AT THE SAME AGES FROM BIRTH REGISTRATIONS BY METHOD 1, 1931 AND 1936, AND OF AGES 5, 6, 7, 8, 9, 1931, PRAIRIE PROVINCES

Province	Census Year of Birth (June-June)	Age Last Birthday at June 1, 1931	Number Alive June 1, 1931 (Census)	Number Surviving June 1, 1931, Calculated from Births Registered (Method 1)	Ratio (Col. 4 : Col. 3)
	(1)	(2)	(3)	(4)	(5)
AGES 0-4, 1931					
		years			
Prairie Provinces	1926-1931	0-4	250,197	239,168	0·96
	1930-1931	0	46,489	50,278	1·08
	1929-1930	1	49,034	49,559	1·01
	1928-1929	2	51,387	47,279	0·92
	1927-1928	3	51,721	46,550	0·90
	1926-1927	4	51,566	45,502	0·88
Manitoba	1926-1931	0-4	66,599	66,325	1·00
	1930-1931	0	12,086	13,460	1·11
	1929-1930	1	13,319	13,405	1·01
	1928-1929	2	13,571	13,066	0·96
	1927-1928	3	14,097	13,264	0·94
	1926-1927	4	13,526	13,130	0·97
Saskatchewan	1926-1931	0-4	105,226	98,465	0·94
	1930-1931	0	19,247	20,308	1·06
	1929-1930	1	20,501	20,120	0·98
	1928-1929	2	21,562	19,654	0·91
	1927-1928	3	21,773	19,335	0·89
	1926-1927	4	22,053	19,048	0·86
Alberta	1926-1931	0-4	78,372	74,378	0·95
	1930-1931	0	15,156	16,510	1·09
	1929-1930	1	15,214	16,034	1·05
	1928-1929	2	16,164	14,559	0·90
	1927-1928	3	15,851	13,951	0·88
	1926-1927	4	15,987	13,324	0·83

V.—COMPARISON OF THE CENSUS POPULATION AGED 0, 1, 2, 3, 4, WITH THE NUMBER CALCULATED AS ALIVE AT THE CENSUS DATE AT THE SAME AGES FROM BIRTH REGISTRATIONS BY METHOD 1, 1931 AND 1936, AND OF AGES 5, 6, 7, 8, 9, 1931, PRAIRIE PROVINCES—Con.

Province	Census Year of Birth (June-June)	Age Last Birthday at June 1, 1931	Number Alive June 1, 1931 (Census)	Number Surviving June 1, 1931, Calculated from Births Registered (Method 1)	Ratio (4 : 3)
	(1)	(2)	(3)	(4)	(5)
AGES 0-4, 1936					
		years			
Prairie Provinces	1931-1936	0-4	231,134	234,251	1·01
	1935-1936	0	44,190	46,649	1·06
	1934-1935	1	42,167	45,819	1·09
	1933-1934	2	46,822	45,729	0·98
	1932-1933	3	48,373	47,624	0·98
	1931-1932	4	49,582	48,430	0·98
Manitoba	1931-1936	0-4	61,380	63,276	1·03
	1935-1936	0	11,684	12,614	1·08
	1934-1935	1	11,167	12,382	1·11
	1933-1934	2	12,349	12,076	0·98
	1932-1933	3	12,826	12,962	1·01
	1931-1932	4	13,354	13,242	0·99
Saskatchewan	1931-1936	0-4	93,731	93,916	1·00
	1935-1936	0	17,803	18,409	1·03
	1934-1935	1	17,174	18,371	1·07
	1933-1934	2	18,996	18,517	0·97
	1932-1933	3	19,670	19,165	0·97
	1931-1932	4	20,088	19,454	0·97
Alberta	1931-1936	0-4	76,023	77,059	1·01
	1935-1936	0	14,703	15,626	1·06
	1934-1935	1	13,826	15,066	1·09
	1933-1934	2	15,477	15,136	0·98
	1932-1933	3	15,877	15,497	0·98
	1931-1932	4	16,140	15,734	0·97
AGES 5-9, 1931					
		years			
Prairie Provinces	1926-1931	5-9	249,867	235,402	0·94
	1930-1931	5	49,576	48,681	0·98
	1929-1930	6	50,565	48,783	0·96
	1928-1929	7	49,359	46,719	0·95
	1927-1928	8	50,584	46,097	0·91
	1926-1927	9	49,783	45,122	0·91
Manitoba	1926-1931	5-9	67,410	65,295	0·97
	1930-1931	5	13,136	13,033	0·99
	1929-1930	6	13,472	13,195	0·98
	1928-1929	7	13,313	12,911	0·97
	1927-1928	8	13,893	13,135	0·95
	1926-1927	9	13,596	13,021	0·96
Saskatchewan	1926-1931	5-9	102,394	96,926	0·95
	1930-1931	5	20,074	19,663	0·98
	1929-1930	6	20,672	19,805	0·96
	1928-1929	7	20,278	19,421	0·96
	1927-1928	8	20,751	19,147	0·92
	1926-1927	9	20,619	18,890	0·92
Alberta	1926-1931	5-9	80,063	73,183	0·98
	1930-1931	5	16,366	15,985	0·98
	1929-1930	6	16,421	15,783	0·96
	1928-1929	7	15,768	14,387	0·91
	1927-1928	8	15,940	13,815	0·87
	1926-1927	9	15,568	13,213	0·85

RATIO OF CENSUS POPULATION 0-4, 1931 AND 0-9, 1936 TO NUMBER CALCULATED FROM BIRTH REGISTRATIONS AS ALIVE AT CENSUS DATES, PRAIRIE PROVINCES

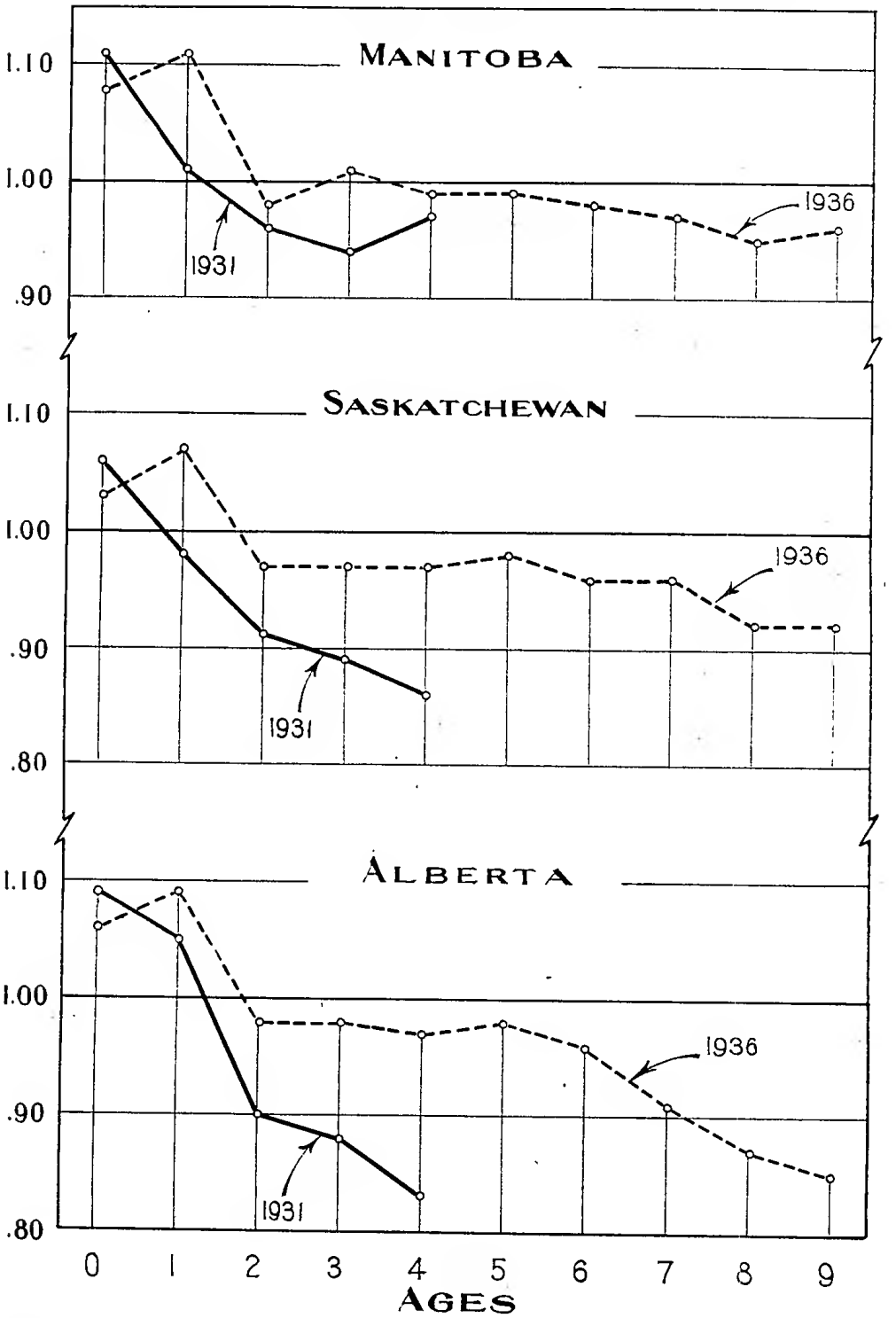


CHART 1

From the statements and chart the following results stand out:—

(1) At the ages 0-4 a striking improvement (0·96 to 1·01) with time is shown from the comparison of 1926-31 births with the 1931 Census and the comparison of 1931-36 births with the 1936 Census. This improvement extends into every age group and through all three provinces. The only ways in which this would be explained away is by the 1936 Census being less complete than the 1931, a ridiculous supposition, or by migration being important in 1931. This will be considered later.

(2) Using comparisons based on the 1936 Census alone there is a much closer approximation between births and census of the earlier ages than at the later. In fact the age-5-9 comparisons of 1936 seem a replica of the age-0-4 comparisons of 1931. Further, in the figures at the later ages 7, 8 and 9, sloping so sharply downwards, we have an indication that the migration may be upsetting the calculations. Such balance of immigration as existed would obviously act in the direction of lowering the births in comparison with the census.

The Effect of Migration on the Foregoing Comparisons.—It is, of course, plain that the comparison of the births with the census should take immigration into account. Unfortunately, the immigrants are not recorded by single years of age and, in any case, there are no direct statistics of the movement from province to province within the Dominion. But we can find the effect of migration at least roughly by ascertaining what percentage of the population of age 0-4 in each province in 1931 was not born in that province, being born either in another province or abroad. Following are the percentages so calculated:—

VI.—CHILDREN 0-4 YEARS OF AGE SHOWING NUMBER BORN IN PROVINCE AND PERCENTAGE NOT BORN IN PROVINCE, CANADA, BY PROVINCES, 1931

Province	Children 0-4 Years		
	Total (1)	Born in Province (2)	P.C. Not Born in Province (3)
Prince Edward Island	9,145	8,877	2·9
Nova Scotia	53,259	51,480	3·3
New Brunswick	47,586	45,623	4·1
Quebec	352,895	345,506	2·1
Ontario	307,669	295,578	3·9
Manitoba	66,599	63,062	5·3
Saskatchewan	105,226	99,789	5·2
Alberta	78,372	71,867	8·3
British Columbia	51,979	47,522	8·6

Of course, the percentages in column 3 of Statement VI should not be deducted from the number the census gives as living at ages 0-4 for purposes of comparison with the births of the preceding years, since the birth registrations include cases of infants who were born in the given province and moved elsewhere before the taking of the census and who, therefore, should rightly be deducted from the births. These two corrections would partly balance one another though the first mentioned is undoubtedly the more important. Some idea of the extent of movement is given by the ratio to the number of persons 0-4 living in one province of the number born in that province but living elsewhere in Canada (column 3 below).

VII.—RATIO OF NUMBER 0-4 YEARS OF AGE BORN IN PROVINCE BUT LIVING ELSEWHERE IN CANADA TO THE NUMBER 0-4 YEARS OF AGE LIVING IN THE PROVINCE, CANADA, BY PROVINCES, 1931

Province	Population 0-4		
	Living in Province (1)	Born in Province but Living Elsewhere in Canada (2)	P.C. Col. 2 Forms of Col. 1 (3)
Prince Edward Island	9,145	131	1·43
Nova Scotia	53,259	636	1·19
New Brunswick	47,586	812	1·71
Quebec	352,895	3,178	0·90
Ontario	307,669	4,311	1·40
Manitoba	66,599	3,103	4·66
Saskatchewan	105,226	3,968	3·77
Alberta	78,372	2,410	3·08
British Columbia	51,979	1,185	2·28

The net correction by which the ratios of completeness given in Statements IV and V must be increased on account of the balance of migration is thus something between zero and the percentages of column 3 of Statement VI.

It will be noted that throughout this section we have compared the numbers of children at the census date with the numbers to be expected on the basis of births and deaths in the appropriate years previous to the census, instead of calculating back from the census date to the year of birth and comparing directly with the total of births. The latter method would apparently render the results more exact but they would differ from the figures given in this section by less than 0·5 p.c. It was felt that no object would be served by calculating percentages of incompleteness closer than to the nearest unit for it was not desired to facilitate comparisons, such as between provinces, to which the data seemed unsuited.

SEARCH FROM THE CENSUS TO BIRTH REGISTRATIONS

Recognizing the difficulties of making a direct comparison between the census and the records of births and deaths, a sample of children was taken from the census records of 1931 and for these a search was made through the registration files to ascertain in what percentage of cases for each province a record of registration could be found. No infants were included in the search unless the census gave their birthplace as the province of residence on June 1, 1931.

Prince Edward Island.—In the case of Prince Edward Island, where a previous rough survey had indicated serious deficiency in reporting, the search was fairly thorough. Every child reported as under one year of age in the census of June 1, 1931, was searched for in the registration files. Out of the total of about 1,500, 357 or 20 p.c. were not found.

Nova Scotia.—The sample for Nova Scotia was obtained by the counting out of every fifth census book, taking districts in numerical order and sub-districts within the district likewise in numerical order. The comparison here too was between children under one year enumerated in the Census of 1931 and birth registration for births occurring from June, 1930, to May, 1931. The result was as follows for the province as a whole and three municipalities:—

Item	Total Cards Taken from Census Schedules	Matched with Birth Transcripts	
		No.	P.C.
Nova Scotia	2,067	1,774	86
Halifax	291	248	85
Sidney	81	65	80
Glace Bay	151	122	81

The search was conducted first in the county in which the child was resident at the time of the census and then in the entire province after the birth certificates for the province had been arranged in numerical order.

New Brunswick.—The sample chosen for New Brunswick was a random one for cities and purposive for towns, villages and parishes. In the cities of Moncton, Saint John and Fredericton, one-fifth of the books were counted out. For the rest of the province, one town or village out of five was taken in order to secure even geographical distribution and a proportion of French to English speaking families equal to that in the province as a whole. Out of 1,865 cases thus abstracted from the census and written down on cards, 1,668 were matched with birth certificates, giving a completeness of 89 p.c. Cities showed a deficiency of 6 p.c., towns and villages 3 p.c., and rural parishes 13 p.c., though of course these figures should be interpreted with the smallness of the total sample in mind.

The 1,100 infants who had died before the census date were sampled in the proportion of one-fifth, and among the 169 of the sample who were born before June 1, it was found that 163 had been registered, leaving a deficiency of less than 4 p.c.

Quebec.—The sample for Quebec was obtained by arranging the books in the numerical order of the electoral districts in three separate series, for cities, towns and rural parts respectively, and selecting every twelfth book in order in each series. Owing to the size of the province the search had to be limited in each case to the county concerned, except that for any child in Montreal

and Jesus Islands the search was conducted throughout the whole of the islands. However, about 99·5 p.c. of births were found to take place in the county of residence. The results were as follows:—

Item	Total Cards Taken from Census Schedules	Matched with Birth Transcripts	
		No.	P.C.
Quebec	5,473	4,974	91
Montreal Island	1,557	1,324	85
Remainder of province—			
Cities	731	679	93
Towns	260	242	93
Rural	2,925	2,729	93

A search was likewise made for the birth certificates corresponding to 1,151 death returns and 1,099 were found, making 95 p.c. completeness. Here Montreal Island was conspicuously poorer than the rest of the province. From Indian Reserves 227 names were taken from census schedules and only 130 were found. Among religious denominations on Montreal Island the Roman Catholic was by far the most complete, showing 91 p.c. against the 85 p.c. of the island as a whole. Registrations of French children were likewise high, being 94 p.c. for the province.

These figures, like the ones given for other provinces, are the result of search among birth certificates undertaken in the office of the Dominion Bureau of Statistics. But in the case of Quebec, Dr. Parrot, the Provincial Registrar, assisted in the search for the 499 cards which the Bureau was unable to find. He was able to find 115 cards out of the 266 cards for the province other than Montreal Island, of which the Bureau verified 104, and he found 47 for Montreal Island. These bring the provincial registration to 94 p.c. of completeness.

Ontario.—In Hamilton, Ottawa, London and Windsor every fifth book in numerical order was taken from the census. In the remainder of the province every tenth book in numerical order was taken. The figures for the four above-named cities were halved before aggregating for the provincial completeness of registration. As in Quebec, searches were limited to the county of residence at the time of the census, but a test was made of the percentage of births which are registered elsewhere than in county of regular residence, and a factor applied to the cards matched, which brought the provincial average from 89 p.c. (as shown below) to 92 p.c.

Item	Total Cards Taken from Census Schedules	Matched with Birth Transcripts	
		No.	P.C.
Ontario	5,763	5,138	89
Cities of 40,000 and over	1,586	1,439	91
Cities under 40,000	760	682	90
Towns	757	668	88
Rural	2,660	2,349	88

Manitoba.—In the cities of Manitoba every fifth book was taken. For the rest of the province the sample was obtained by a counting out of every fifth town, every fifth village, and every fifth rural municipality when arranged by order of census divisions. The results were as follows:—

Item	Total Cards Taken from Census Schedules	Matched with Birth Transcripts	
		No.	P.C.
Manitoba	2,402	2,164	90
Cities	699	638	91
Towns	138	134	97
Villages and rural municipalities	1,565	1,392	89

Saskatchewan.—For the cities and towns of Saskatchewan every fifth book was taken and, in rural parts, including villages, every seventh book was taken after the schedules were arranged by census divisions.

Item	Total Cards Taken from Census Schedules	Matched with Birth Transcripts	
		No.	P.C.
Saskatchewan[1]	2,806	2,454	88
Cities	573	541	94
Towns	149	130	87
Rural municipalities	2,248	1,938	86

[1] Cities reduced by 2/7.

Alberta.—The sample for Alberta was obtained by taking every fifth book in the group of cities, Calgary, Edmonton, Lethbridge and Medicine Hat; one book from each of the cities Drumheller, Red Deer and Wetaskiwin; and every seventh book in towns and rural municipalities. The results were as follows:—

Item	Total Cards Taken from Census Schedules	Matched with Birth Transcripts	
		No.	P.C.
Alberta[1]	2,203	1,986	90
Cities	762	700	92
Towns	142	135	95
Rural (including villages)	1,516	1,351	89

[1] Cities reduced by 2/7.

Mr. Mackie, Deputy Registrar-General of Alberta, studied the 21 cases that could not be matched for the city of Edmonton and was able to account for 15 of them as misspelled names, adopted children, etc. Mr. Mackie expressed the opinion that the check from the census gave a minimum far below the actual level of completeness. He gave the experience in the search among the 8,851 school children in the year 1932-33 (according to Alberta regulations teachers report the names of all children born in Alberta when the latter first enter school), and approximately 97 p.c. of the school children born in Alberta were thus found to be registered—which constitutes a very important piece of evidence.

British Columbia.—The sample for Vancouver, Victoria and New Westminster was obtained by taking one-fifth of the census books. In Vancouver and Victoria they were chosen to represent, as far as could be ascertained, the different elements in the population of these cities. In New Westminster the books for the sample were obtained by counting out. For the remainder of the province there were two samples taken—one purposive according to racial origin and the other random. The random sample was obtained by counting out one-fifth of all the books that had not been included in the purposive sample.

Item	Total Cards Taken from Census Schedules	Matched with Birth Transcripts	
		No.	P.C.
British Columbia[1]	1,862	1,622	87
Larger cities	829	748	90
Purposive sample of smaller cities	339	323	95
Purposive sample of rural parts	797	724	91
Random sample of smaller cities	120	103	86
Random sample of rural parts	686	561	82

[1] Purposive samples of smaller cities and rural parts reduced by 4/5.

Searches were carried out, first throughout the county of residence at the time of the census, and then throughout the entire province.

Omissions from the Census.—In order to find out how many young infants were omitted from the census returns when a census happened to be taken shortly after their birth, samples were collected from the census returns of 1931 and 1936 for the province of Alberta. A description of the method of collecting these samples is given in Appendix 1, page 394. In a sample of 1,231 males 0-9 years old there were 14 of stated age 5 in the 1936 Census who were omitted from the 1931 Census, two of stated age 6, one of stated age 7, (whose families were located in 1931). In a similar manner, out of 1,220 females 0-9 years old, 9 who were stated age 5 in 1936 were omitted in 1931 and two stated age 6. The ratio of the omission of males to the number 0-9 in the sample is 0·014 and for the females it is 0·009, or 0·012 for both sexes.

Estimation of Non-Measurable Factors Affecting Sample Investigation.—The foregoing percentages of completeness of birth registrations must be taken as absolute minima. There is only one way in which they could be overestimates, *viz.*, through the existence of a tendency for infants to be missed entirely both in the census and in the Vital Statistics. In practice this is unlikely to amount to a great deal as the evidence of the preceding paragraph shows. There is strong reason to believe that a good many of the 1·2 p.c. above referred to were really only 4 years of age in 1936 and therefore would not have been born in 1931; but let us assume that there are enough other children missed out in both 1931 and 1936 to bring the total omissions from the census (not including overstatements) at age zero to 2 p.c. which is a high figure in the light of every test that has been performed. Further assume that in this specially select group of infants which the census enumerator misses there is a deficiency of registration of 50 p.c.—which is higher than any group of infants investigated. Even on these exaggerated assumptions, omissions in the census could only conceal an incompleteness of registrations of 1 p.c. in the tests performed.

Consider, on the other hand, the number of ways in which the figures for completeness in birth returns given above could be understatements. First, there is the occurrence very frequently noted in the revision of the census that persons who have migrated to this country from the United States show children with birthplace Canada whose age indicates that they were born previous to the date of migration. Where this happens in the case of immigrants from the United States it is usually corrected in the revision of the census, but where it happens in the case of Canadians born outside of their province of residence there is no way of correcting it. Mr. Mackie states in correspondence that out of the 8,851 school pupils for which registrations were searched in Alberta, all of whose parents stated that they were born in Alberta, fully 308 on later investigation were found to have been born out of the province. With the same ratio for errors in statement to the census enumerator, about 4 p.c. of the deficiency in the sample survey of completeness would be accounted for, or from one-third to one-half of the unmatched cards.

The misspelling of names by the census enumerators is a factor of unknown weight. Illegitimate children and children adopted subsequent to registration and before the census were difficult to trace. Errors on the part of clerks in making out the cards from the census schedules (understandable in view of the indistinct writing of many of the enumerators), incomplete search by the clerks seeking to match the transcripts—in fact, any kind of clerical error from beginning to end—would result in an underestimate of the completeness of registrations in the sample investigation.

In all, some 26,205 names were searched from census schedules to birth transcripts, and the aggregate percentage matched was 88 (see Table 1, Part III, page 334). In view of the considerations above outlined, however, we think it not unreasonable to put the deficiency of birth registrations at not over half the percentage unmatched.

CONTINUATION OF CANADIAN LIFE TABLES, 1931, BACK TO AGE ZERO

In Tables 2 and 3 Part III, pages 355 and 356, are given the completions to age zero of the Life Tables, males and females, for Canada and each of its regional divisions. They are obtained in the following manner:—

The deaths during the years 1930-32 are taken as arising from the births of the same period. This is not strictly accurate, but brings about a very considerable simplification in arithmetic. The amount of error it introduces will be considered below. Deducting successively from these births the deaths of less than 1 day, of 1 to 2 days, etc., we obtain numbers proportional to l_o, $l_{\frac{1}{365}}$, $l_{\frac{2}{365}}$, etc. The l_1 was determined from the 100,000 assumed at age 5 by working backward using the following values of q:—

$$q_1 = \frac{d_1}{\frac{1}{2}\beta_{1928} + \beta_{1929} + \beta_{1930} + \frac{1}{2}\beta_{1931} - (d_{o\,(1929)} + d_{o\,(1930)} + d_{o\,(1931)})}, \text{ etc.}$$

To obtain $l_{\frac{11}{12}}$ the figure for $\beta_{1930\text{-}32} - d_{o-\frac{11}{12}}$ was multiplied by the factor $\frac{l_1}{\beta_{1930\text{-}32} - d_o}$

similarly $l_{\frac{10}{12}}$ was given by $\left(\beta_{1930\text{-}32} - d_{o-\frac{10}{12}}\right)\left(\frac{l_1}{\beta_{1930\text{-}32} - d_o}\right)$, etc. L_x was taken as $\frac{l_x + l_{x+}}{2}$

from $x = 1$ to $x = 4$ and as $\frac{l_x + l_{x+\frac{1}{12}}}{2}$ for x from $\frac{1}{12}$ to $\frac{11}{12}$; as $\frac{l_x + l_{x+\frac{1}{52}}}{2}$ for x from $\frac{1}{52}$ to $\frac{2}{52}$

and as $l_x + l_{x+\frac{1}{52}} + (\frac{1}{12} - \frac{4}{52})$ for $x = \frac{3}{52}$.

T_x was taken as $\frac{1}{2}\,l_x + \sum_{t=o}^{\omega-x} l_{x+t+1} = \sum_{t=o}^{\omega-x} L_{x+t} = L_x + \sum_{t=o}^{\omega-x} L_{x+t+1}$ for ages 1 to 4.

Between 1 and 12 months T_x was taken as $T_{x+\frac{t}{12}} = T_{x+\frac{t+1}{12}} + \frac{1}{12} L_{x+\frac{t}{12}}$;

for 1 and 2 weeks as $T_{x+\frac{t}{52}} = T_{x+\frac{t+1}{52}} + \frac{1}{52} L_{x+\frac{t}{12}}$;

for 3 weeks as $T_{x+\frac{3}{52}} = T_{x+\frac{1}{12}} + (\frac{1}{12} - \frac{3}{52}) L_{x+\frac{3}{52}}$;

for 0 to 6 days as $T_{x+\frac{t}{365}} = T_{x+\frac{t+1}{365}} + \frac{1}{365} L_{x+\frac{t}{365}}$.

The more precise formulæ for the q's would be:—

$$|_{\frac{1}{365}} q_o = \frac{d_{1930\text{-}32}^{(0\ -\ \frac{1}{365})}}{\beta_{1930\text{-}32} - \frac{1}{730}(\beta_{1932} - \beta_{1929})}$$

$$|_{\frac{1}{365}} q_{\frac{1}{365}} = \frac{d_{1930\text{-}32}^{(\frac{1}{365}\ -\ \frac{2}{365})}}{\beta_{1930\text{-}32} - \left(\frac{1}{365} + \frac{1}{730}\right)(\beta_{1932} - \beta_{1929})}$$

$$|_{\frac{1}{52}} q_{\frac{1}{52}} = \frac{d_{1930\text{-}32}^{(\frac{1}{52}\ -\ \frac{2}{52})}}{\beta_{1930\text{-}32} - \left(\frac{1}{52} + \frac{1}{104}\right)(\beta_{1932} - \beta_{1929})}$$

$$|_{\frac{1}{52}} q_{\frac{2}{52}} = \frac{d_{1930\text{-}32}^{(\frac{2}{52}\ -\ \frac{3}{52})}}{\beta_{1930\text{-}32} - \left(\frac{2}{52} + \frac{1}{104}\right)(\beta_{1932} - \beta_{1929})}$$

whereas, actually, $\beta_{1930\text{-}32}$ was used as the denominator in every case.

But since the births for Canada numbered 235,666 in 1932 and 235,415 in 1929, the difference is small. Even for the last month of the year the theoretically correct denominator (for males where the difference is greater) is 369,556 against 369,373 as actually used—a difference of 0·05 p.c. This would barely affect the fifth place of decimals in q_x, and the method actually employed has the very great advantage in convenience of a constant denominator for all the q_x's less than 1 year.

Though the investigations of incompleteness methods and results of which are shown on the preceding pages do not give entirely compatible results, and though they show rather wide differences between provinces, they indicate that the understatement of births is certainly not greater than 6 or 7 p.c. and, on the other hand, that it is probably not very much less than 3 or 4 p.c. We do not believe that the methods used are sufficiently refined to take precise account of differences between provinces and therefore it would seem best to assume for the Dominion as a whole, and for each part of it separately, for purposes of construction of a completion to age zero of Canadian Life Table No. 1, a deficiency of registrations of 5 p.c. This will be more reliable than the table constructed without an allowance for incompleteness as long as there is an actual deficiency of more than 2·5 p.c. Tables on this basis are shown on pages 341 and 342.

It may be interesting, in view of the fact that births are almost universally favoured for the computation of the exposed to risk in the first years of life in mortality tables based on the general population, to find the difference in the expectation of life at age zero on the two bases. If we assume no deficiency in birth registrations the expectation at birth of a Canadian male is 59·62 years; assuming 5 p.c. deficiency it is 60·00 years and assuming 10 p.c. deficiency, 60·37 years. We find evidence that the increase in calculated expectation which results from the assumption of a deficiency in births is a linear function of that deficiency. The statement below shows that this is also true of l_0, when we take l_5 as fixed at 100,000.

VIII.—RELATIONSHIP BETWEEN THE ASSUMPTION OF A DEFICIENCY IN BIRTH REGISTRATIONS AND THE VALUES OF THE EXPECTATION OF LIFE AND THE NUMBER LIVING, LIFE TABLE FOR CANADA, MALES, 1930-1932

Item	Value of $\mathring{e}_0$	First Difference	Value of l_0	First Difference
Assuming no deficiency in birth registrations	59·62		113,035	
		0·38		−717
Assuming 5 p.c. deficiency in birth registrations	60·00		112,318	
		0·37		−704
Assuming 10 p.c. deficiency in birth registrations	60·37		111,614	
Average difference per assumption of 1 p.c. deficiency		0·075		−142

CHAPTER II

THE TREND OF THE CANADIAN BIRTH RATE IN THE POST-WAR PERIOD

INTRODUCTION

World Trend.—The trend of mortality, and particularly of mortality at the younger ages, the reduction in which produced such important effects in the increase of population during the nineteenth century in the European countries and those with which they came in contact, has received a great deal of attention by students of population.

This decline in mortality at the younger ages has been continued in the post-War period in the countries of western civilization at an even augmented rate. While on humanitarian grounds and from the standpoint of human happiness this is a fact over which to exult, one of the most important tasks of Vital Statistics is to measure the success which has been attained in this respect by various public health measures, higher standards of living and the other factors which affect mortality. The effect on the increase in population of saving life has been checked by another factor which has revealed itself to an astonishing degree in the post-War period in English speaking countries and the countries of Northern and Western Europe in general. This is the decline in the birth rate.

A declining birth rate was by no means unknown before the Great War. The birth rate of France had long been notoriously low. That of England and Wales was falling noticeably and steadily from the late 1870's and the birth rate of Germany commenced to fall from the turn of the century. But the increase in the rate of decline in the post-War period throughout the countries mentioned above has been so notable as to attract special attention; it has given rise to more intensive methods of measuring the decline and the factors which produced it.

As examples of the extent of the decline, the English birth rate, which was 22·4 per thousand in 1921 and 20·4 in 1922, had declined to 14·4 in 1933 and appeared to stabilize itself between 14 and 15 during the following years. The Italian rate was in the neighbourhood of 30 in the years 1921-23 but had fallen to 23·8 by 1932 and, in spite of a tendency to stabilize, showed further slight declines until it reached 22·4 in 1936. The German birth rate, which was 25·3 in 1921 and 23·0 in 1922, had fallen to 14·7 by 1933 but from this point showed a surprising rally which may be largely due to State encouragement of marriage and parenthood. This rally brought the rate to 18·9 in 1935 and 19·0 in 1936. The similarity of these figures indicates, perhaps, the upper limit of effectiveness.

It might be held that under post-War conditions in Europe, with opportunities of supporting large populations in the manufacturing of products from whose exchange they would obtain the surplus of raw materials and food supplies required for the maintenance of such an economy, a decline in birth rate was the easiest and most natural means of removing the pressure on the standard of living which an excessive population under these conditions would produce. But, if we look at the newer countries of the British Empire where it must be held that the optimum of population has by no means yet been reached, we find a similar trend in the post-War birth rate. New Zealand's rate fell from 23·3 in 1921 and 23·2 in 1922 to 16·1 in 1935, the year 1936 showing a slight recovery to 16·6. These slight recoveries of 1935 and 1936 appear most probably to be reactions from the economic depression of the preceding years. Australia showed a rate of about 25 per thousand in 1921 and 1922. In the years 1932-35 it was between 16 and 17, although 1936 showed a slight increase to 17·1. The birth rate of the white population of the Union of South Africa declined from 28·4 in 1921 and 27·5 in 1922 to reach its lowest point, 23·4 in 1934, the two following years showing a slight increase to 24·4 in 1936.

Finally, Canada, which had a rate of 29·4 in 1921 and 28·4 in 1922, showed a decline which, though apparently hurried some by the depression, has indicated no reaction since and registered the lowest rate of any of the years between 1921 and 1936 in the last named year, when it stood at 20·0 per thousand.

The United States (Registration Area) showed a birth rate which declined from 24·2 in 1921 and 22·3 in 1922 to 16·6 in 1933 and, although 1934 and 1935 showed slightly higher rates, the year 1936 registered 16·6 again.

The rates for the countries which have been mentioned are shown, year by year, in Statement IX, from which it will be noted that the decline manifested itself throughout the whole period and was by no means a mere reflection of the recent great economic depression. The statement contains, for purposes of comparison, a few countries which are neither English speaking nor European. It will be seen that in some of these, as in the case of Japan, there is evidence of a downward movement although the Japanese birth rate at the end of the period shown in the statement was slightly higher than the Canadian birth rate at the beginning of the period.

IX.—BIRTH RATES[2] IN VARIOUS COUNTRIES, 1921-1936

Country	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Canada (nine provinces)	29·4	28·4	26·7	26·8	26·1	24·7	24·3	24·1	23·5	23·9	23·2	22·5	20·9	20·5	20·3	20·0
Australia	25·0	24·7	23·8	23·2	22·9	22·0	21·6	21·3	20·3	19·9	18·2	16·0	16·8	16·4	16·6	17·1
Austria	23·2	23·1	22·4	21·6	20·5	19·1	17·8	17·5	16·7	16·8	15·9	15·2	14·3	13·6	13·2	13·1
Belgium	21·8	20·4	20·4	19·9	19·8	19·0	18·3	18·4	18·1	18·7	18·2	17·6	16·5	16·0	15·4	15·1
Bulgaria	40·2	40·5	37·7	39·8	36·9	37·4	33·2	33·1	30·6	31·4	29·4	31·5	29·2	30·0	26·3	25·6
Ceylon	40·7	39·1	38·7	37·5	39·9	42·0	41·0	41·9	38·3	39·0	37·4	37·0	38·6	37·2	34·4	33·5
Chile	39·2	38·7	39·5	40·0	39·8	40·1	42·8	43·6	41·9	39·8	34·6	34·2	33·4	33·8	34·1	34·1
Czechoslovakia	29·2	28·2	27·3	25·8	25·1	24·6	23·3	23·3	22·4	22·7	21·5	21·0	19·2	18·7	17·9	17·4
Denmark	24·0	22·2	22·3	21·8	21·0	20·5	19·6	19·6	18·6	18·7	18·0	18·0	17·3	17·8	17·7	17·8
Egypt	42·3	43·2	43·0	43·3	42·8	43·2	44·0	43·3	43·7	44·6	43·2	41·1	42·1	40·3	39·4	[1]
Eire	19·7	19·5	20·5	21·1	20·8	20·6	20·3	20·1	19·8	19·9	19·5	19·1	19·4	19·5	19·6	19·6
England and Wales	22·4	20·4	19·7	18·8	18·3	17·8	16·7	16·7	16·3	16·3	15·8	15·3	14·4	14·8	14·7	14·8
Estonia	20·3	20·2	20·1	19·2	18·3	17·9	17·7	18·0	17·1	17·4	17·4	17·6	16·2	15·4	15·9	16·1
Finland	24·3	23·4	23·7	22·4	22·3	21·7	21·1	21·5	20·9	20·6	19·5	18·7	17·4	18·1	18·5	18·1
France	20·7	19·3	19·1	18·7	19·0	18·8	18·2	18·3	17·7	18·0	17·5	17·3	16·2	16·2	15·3	15·0
Germany	25·3	23·0	21·2	20·6	20·8	19·6	18·4	18·6	18·0	17·6	16·0	15·1	14·7	18·0	18·9	19·0
Greece	24·5	22·6	19·9	21·2	26·9	30·7	29·3	30·5	29·0	31·4	30·9	28·5	28·8	31·2	28·3	28·1
Hungary	31·8	30·8	29·2	26·8	28·4	27·4	25·8	26·4	25·1	25·4	23·7	23·4	22·0	21·9	21·2	20·0
Iceland	27·1	26·1	26·5	25·3	[1]	26·6	25·8	24·8	24·9	25·8	25·7	24·4	22·5	22·8	22·0	22·1
India (British)	32·2	31·9	35·1	34·4	33·6	34·8	35·3	36·8	35·5	36·0	34·4	34·1	35·5	33·6	34·9	35·4
Italy	29·2	30·8	30·0	29·0	28·4	27·7	27·5	26·7	25·6	26·7	24·9	23·8	23·7	23·4	23·3	22·4
Japan	35·1	34·2	34·9	33·8	34·9	34·8	33·6	34·4	33·0	32·4	32·2	32·9	31·6	30·0	31·0	29·9
Jamaica	34·9	37·3	38·2	36·8	34·6	38·5	34·8	35·8	34·2	37·0	34·8	32·2	32·9	31·2	33·4	32·4
Latvia	19·7	21·8	21·9	22·3	22·3	22·0	22·1	20·7	18·8	19·8	19·3	19·4	17·8	17·2	17·6	18·1
Netherlands	27·7	26·1	26·2	25·1	24·2	23·8	23·1	23·3	22·8	23·1	22·2	22·0	20·8	20·7	20·2	20·1
Newfoundland	27·2	27·8	27·8	25·6	26·0	27·0	25·5	24·6	24·2	23·8	23·3	24·0	23·4	23·4	23·0	25·2
New Zealand	23·3	23·2	21·9	21·6	21·2	21·0	20·3	19·6	19·0	18·8	18·4	17·1	16·6	16·5	16·1	16·6
Northern Ireland	23·6	23·3	23·9	22·7	22·0	22·5	21·3	20·8	20·4	20·8	20·5	19·9	19·4	19·8	19·2	20·2
Norway	24·2	23·3	22·8	21·3	19·7	19·6	18·1	17·9	17·3	17·0	16·3	16·0	14·8	14·6	14·4	14·8
Poland	32·8	35·3	35·6	34·5	35·2	33·1	31·6	32·3	32·0	32·5	30·2	28·8	26·5	26·5	26·1	26·2
Portugal	32·6	33·6	34·1	34·1	34·2	34·9	32·3	34·1	32·3	32·8	32·9	29·8	28·9	28·4	28·5	28·2
Roumania	38·2	37·2	36·4	36·7	35·2	34·8	34·1	34·7	33·0	34·6	33·3	35·9	32·0	32·4	30·7	31·5
Scotland	25·2	23·5	22·9	22·0	21·4	21·1	19·9	20·0	19·2	19·6	19·0	18·6	17·6	18·0	17·8	17·9
Spain	30·3	30·5	30·5	30·0	29·4	30·0	28·5	29·7	28·9	29·0	27·6	28·4	27·8	26·2	25·7	[1]
Sweden	21·5	19·6	18·9	18·1	17·6	16·8	16·1	16·1	15·2	15·4	14·8	14·5	13·7	13·7	13·8	14·2
Switzerland	20·8	19·7	19·4	18·9	18·5	18·3	17·5	17·4	17·1	17·2	16·7	16·7	16·4	16·2	16·0	15·6
Union of South Africa (White)	28·4	27·5	26·7	26·3	26·5	26·2	26·0	25·8	26·2	26·4	25·4	24·2	23·6	23·4	24·2	24·4
United States (Registration Area)	24·2	22·3	22·2	22·4	21·5	20·7	20·6	19·8	18·9	18·9	18·0	17·4	16·6	17·1	16·9	16·6
Uruguay	26·2	26·0	25·4	25·8	25·4	25·4	24·6	25·0	24·2	24·4	23·1	22·5	21·0	20·5	20·3	19·9

[1] Not available.
[2] Rates per 1,000 population.

Organization of Vital Statistics in Canada.—The purpose of the present monograph is to deal with the decline in the Canadian birth rate over the period 1921-36, taking advantage especially of the Censuses of 1921 and 1931 and, in the Prairie Provinces, the Censuses also of 1926 and 1936 to measure the effect of some of the factors which contributed to this falling birth rate. No attempt is made, however, to go further than the factors which can be measured quantitatively.

At the outset it may be explained that the National System of Vital Statistics in Canada, under which compilations are centrally made in the Dominion Bureau of Statistics from transcripts of birth, death and marriage certificates furnished by the Provincial Registration Offices,

was established in 1920 and detailed statistics were first compiled under this system for the year 1921. This is the reason why the year 1921 has been selected as the first year of the comparisons made in the report, although, in any case, the years 1920 and 1919 might be subject to the disadvantage that their birth rates reflect, to some extent at least, the accumulation of delayed marriages when the War ended. This objection may in some measure even apply to 1921 from the marriages of 1920 but it could hardly have existed in 1922.

The province of Quebec did not enter the National System until the beginning of the year 1926 and, although in Statement IX rates for the total of the nine provinces of Canada were presented, the Quebec figures for the years 1921-25 were obtained from the reports of the Provincial Bureau of Health of that province. In the remaining statements of the monograph we have confined ourselves to the results of the compilations made in the Bureau of Statistics in order that the figures might not be subject to the objection that they were drawn from more than one source and that these sources might not have attained equal completeness.

The question of completeness of registration must, of course, be considered in connection with any comparison of birth rates. The results of investigations into the completeness of birth registration in Canada appeared in Chapter I. For the present it is sufficient to say that the birth registration is complete enough throughout the period and throughout the various provinces to justify comparisons within reasonable limits. The completeness of registration was at least not worse, and probably was better, at the end of the period than at the beginning, so that the decline in the birth rates has not been exaggerated but has even to a slight extent been masked by the changes in completeness of registration.

SUMMARY OF TREND IN BIRTHS, DEATHS AND NATURAL INCREASE IN CANADA

Live Births.—Statement X presents, by provinces, the number of live births over the period 1921-36. The full comparison in time is made only for the eight provinces for which figures for the whole period were compiled in the Bureau of Statistics, and for the total area comprised in these provinces which is termed "the Registration Area of 1921" and will hereafter be referred to as "the Registration Area." Figures for the province of Quebec and for the total of the nine provinces of Canada are given from 1926.

X.—NUMBER OF LIVE BIRTHS, CANADA, PROVINCES AND THE REGISTRATION AREA, 1921-1936

Year	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Registration Area[2]
1921	[1]	2,156	13,021	11,465	[1]	74,152	18,478	22,493	16,561	10,653	168,979
1922	[1]	2,160	12,693	11,564	[1]	71,430	17,679	22,339	16,163	10,166	164,194
1923	[1]	1,977	11,680	10,704	[1]	70,056	16,472	20,947	15,060	10,001	156,897
1924	[1]	1,858	11,801	10,717	[1]	71,510	15,454	21,539	14,597	10,119	157,595
1925	[1]	1,675	11,400	10,949	[1]	70,122	14,867	20,582	14,924	10,342	154,861
1026	232,750	1,752	10,980	10,340	82,165	67,617	14,661	20,716	14,456	10,063	150,585
1927	234,188	1,697	11,134	10,479	83,064	67,671	14,147	21,015	14,897	10,084	151,124
1928	236,757	1,806	10,931	10,047	83,621	68,510	14,504	21,261	15,692	10,385	153,136
1929	235,415	1,670	10,688	10,235	81,380	68,458	14,236	21,446	16,924	10,378	154,035
1930	243,495	1,749	11,346	10,534	83,625	71,263	14,411	22,051	17,649	10,867	159,870
1931	240,473	1,879	11,615	10,801	83,606	69,209	14,376	21,331	17,252	10,404	156,867
1932	235,666	2,027	11,629	10,810	82,216	66,842	14,124	20,814	16,990	10,214	153,450
1933	222,868	1,946	11,164	10,037	76,920	63,646	13,304	20,145	16,123	9,583	145,948
1934	221,303	1,943	11,407	10,164	76,432	62,234	13,310	19,764	16,236	9,813	144,871
1935	221,451	2,010	11,617	10,388	75,267	63,069	13,335	19,569	16,183	10,013	146,184
1936	220,371	1,977	11,808	10,513	75,285	62,451	12,855	19,125	15,786	10,571	145,086

[1] Quebec not in National System.
[2] Eight provinces, exclusive of Quebec.

For the eight provinces exclusive of Quebec the total number of live births in 1921 was 168,979. The general trend up to 1926 was downward, the low being reached in that year with 150,585 births. From this point slight increases were shown year by year up to 1929 and a larger increase in 1930 brought the total to 159,870 births. From 1930 a second decline in the number set in, the low being reached in 1934 with 144,871 births. The year 1935 showed a slight increase but 1936 manifested a recession almost to the level of 1934. It may, therefore, be said that for the three years 1934-36 a condition of stabilization had been reached. Though the returns for 1937 are not quite complete at the time of writing, the indications are for a further slight recession.

Among the individual provinces, there were, as might be expected, greater fluctuations in the annual number of births than for the total of the eight provinces but the trend in every case was downward over the period and in every province from Ontario west a decline was evident during the years following 1930.

The province of Quebec showed 82,165 live births in 1926, the first year for which its statistics were compiled under the National System and, with minor fluctuations taking place, the number for the year 1931 somewhat exceeded this, being 83,606. The year 1932 showed a slight decline but in the following year the number was more than 5,000 less and this loss was not recovered in subsequent years. For 1936 Quebec registered about 7,000 fewer births than in 1926.

Provincial Birth Rates.—As the population of Canada and of each province was increasing during the period under review, with the exceptions of Prince Edward Island and Nova Scotia, between the Censuses of 1921 and 1931, the declines in the rates per thousand population will, with these exceptions, be greater than the decline in the absolute figures for births. This is exemplified in Statement XI.

XI.—CRUDE BIRTH RATES[3], CANADA, PROVINCES AND THE REGISTRATION AREA, 1921-1936

Year	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Registration Area[2]
1921	[1]	24·3	24·9	30·2	[1]	25·3	30·3	29·7	28·1	20·3	26·4
1922	[1]	24·3	24·3	29·7	[1]	24·0	28·7	29·0	27·3	18·8	25·3
1923	[1]	22·7	22·5	27·5	[1]	23·3	26·6	26·9	25·4	18·0	23·9
1924	[1]	21·6	22·9	27·4	[1]	23·4	24·7	27·2	24·5	17·7	23·7
1925	[1]	19·5	22·1	27·9	[1]	22·5	23·5	25·5	24·8	17·6	23·0
1926	24·7	20·1	21·3	26·1	31·6	21·4	22·9	25·2	23·8	16·6	22·0
1927	24·3	19·5	21·6	26·3	31·3	21·0	21·7	25·0	23·5	16·2	21·7
1928	24·1	20·5	21·2	25·1	30·8	20·9	21·8	24·7	23·8	16·2	21·5
1929	23·5	19·0	20·8	25·3	29·4	20·5	21·0	24·3	24·7	15·7	21·3
1930	23·9	19·9	22·1	25·9	29·6	21·0	20·9	24·4	24·9	16·1	21·7
1931	23·2	21·3	22·6	26·5	29·1	20·2	20·5	23·1	23·6	15·0	20·9
1932	22·5	22·8	22·4	26·2	28·3	19·2	19·9	22·3	23·0	14·5	20·2
1933	20·9	21·9	21·4	23·9	25·9	17·9	18·7	21·6	21·6	13·5	19·0
1934	20·5	21·8	21·7	23·9	25·3	17·1	18·7	21·2	21·5	13·5	18·6
1935	20·3	22·6	22·0	24·2	24·6	17·2	18·8	21·0	21·2	13·6	18·6
1936	20·0	21·5	22·0	24·2	24·3	16·9	18·1	20·5	20·4	14·1	18·3

[1] Quebec not in National System.
[2] Eight provinces, exclusive of Quebec.
[3] Rates per 1,000 population.

For the Registration Area the rate was 26·4 in 1921 and from this level every year showed a decline down to 1929, though sometimes, as between 1927 and 1928 or between 1928 and 1929, the lowering of the rate was very slight. The 1929 rate was 21·3, 5·1 per thousand below the initial rate of 1921. The year 1930 showed an increase to 21·7 but from this point each succeeding year gave a smaller rate until 18·6 was reached in 1934. This rate was again maintained in 1935 but the year 1936 showed a further decline to 18·3, a loss of 8·1 per thousand as compared with 1921.

Considering the individual provinces, Prince Edward Island with the fluctuations which might be expected from so small a province, showed its highest rate, 24·3, in 1921 and its lowest, 19·0, in 1929. The rate for 1936 was 21·5. There is reason to believe, however, that the registration of births in the last few years has been somewhat better in Prince Edward Island than around the period 1929-31 and the recovery indicated in the birth rate is to that extent doubtful.

In Nova Scotia, also, the decline in the rate over the period was small in comparison with that of the total of the eight provinces and the lowest rate, 20·8, was reached in 1929.

The province of New Brunswick, which in 1921 had the comparatively high rate of 30·2, reached its low of 23·9 in 1933 and 1934, the succeeding two years showing a slight improvement. The net loss over the period was 6·0.

Ontario, as might be expected of the largest province, closely corresponded in the direction of the movement of its rate with the total of the eight provinces. The net loss between 1921 and 1936 was, however, slightly greater, being 8·4 per thousand.

The birth rate of Manitoba showed a more startling decline than that of any other province during the post-War period. In 1921 the rate was 30·3—higher than that of any other province

in the Registration Area. Declines were shown year by year ranging from 0·6 per thousand to 2·1, until the low of 21·7 was reached in 1927. The next year showed a very slight recovery to 21·8, but at that point the downward trend recommenced and, although a condition of stability was reached in 1933-35 with rates of 18·7 and 18·8, the year 1936 saw a further fall to 18·1. The net loss over the period was thus no less than 12·2 per thousand.

Saskatchewan at the beginning of the period had a rate slightly lower than Manitoba but by 1930 it was 3·5 per thousand higher. From this point, however, the unfavourable conditions which existed in that province during the last few years of the period may be assumed to have produced an influence on the birth rate and by 1936 the net loss over the period was 9·2.

Alberta, which in 1921 had a rate lower than that of Saskatchewan, declined more rapidly in the early years of the period but reached a condition of stability and, to some extent, of recovery from 1927 to 1930. The secondary decline from that year eventually brought the rate to 20·4 in 1936, almost identical with that of Saskatchewan, giving a net loss of 7·7 over the period.

British Columbia had throughout the period the lowest rate of any province. Even in 1921 the rate was only 20·3 per thousand, and had fallen from this point to 15·7 in 1929. In this province, also, the year 1930 showed a slight recovery succeeded by further declines until the rate stabilized around 13·5 and 13·6 in 1933-35 and advanced a little to 14·1 in 1936.

The rate of the province of Quebec was 31·6 in 1926 when it entered the Registration Area. Declines were registered in every successive year with the exception of 1930 which showed a very slight increase over the preceding year; but all of these declines were slight with the exception of that between 1932 and 1933 when the rate fell from 28·3 to 25·9, a loss of 2·4. The final rate of Quebec in 1936 was 24·3 and the net loss was 7·3, greater in absolute magnitude and proportion than that of any other province in the Dominion during this period of ten years.

It is natural to associate the secondary decline, which was in evidence in Canada and most of the provinces from the year 1930, with the economic depression and to suppose that it was largely due to a falling off in the number of marriages. This relationship will be examined later but in the meantime attention may be called to the fact that when the number of marriages and the marriage rate, which reached their low in 1932 and 1933, showed a movement of recovery, this movement failed to reflect itself in any recovery in the birth rate of Canada as a whole.

Synchronization of Death and Birth Trends.—At this juncture it may be well to see the effect which the changing birth rate produced on the rate of natural increase in Canada. The death rates by provinces over the period 1921-36 are shown in Statement XII.

XII.—DEATH RATES,[3] CANADA, PROVINCES AND THE REGISTRATION AREA, 1921-1936

Year	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Registration Area[2]
1921	[1]	13·6	12·3	14·2	[1]	11·8	8·8	7·4	8·4	8·0	10·6
1922	[1]	12·5	12·8	13·3	[1]	11·4	9·3	8·0	8·9	9·1	10·6
1923	[1]	13·2	13·3	12·9	[1]	11·8	8·6	7·9	8·4	9·0	10·7
1924	[1]	11·1	12·8	12·6	[1]	10·8	8·0	7·3	8·1	8·8	10·0
1925	[1]	11·6	11·7	12·6	[1]	10·9	8·3	7·0	7·8	8·4	9·9
1926	11·4	10·3	12·4	12·6	14·3	11·3	8·3	7·4	8·5	9·0	10·3
1927	10·9	10·5	12·4	12·3	13·6	10·8	8·2	7·2	8·0	9·2	9·9
1928	11·1	10·8	12·0	12·4	13·5	11·3	8·1	7·2	8·7	9·2	10·2
1929	11·3	12·8	12·9	12·9	13·4	11·4	8·6	7·6	9·1	9·7	10·5
1930	10·7	10·9	12·1	12·3	12·7	11·0	8·3	7·0	7·8	9·5	10·0
1931	10·1	10·4	11·6	11·4	12·0	10·4	7·6	6·6	7·2	8·8	9·4
1932	9·9	11·8	11·9	11·0	11·4	10·5	7·5	6·5	7·5	8·7	9·4
1933	9·6	11·6	11·6	11·7	10·7	9·9	7·7	6·5	7·1	8·7	9·1
1934	9·4	11·6	11·5	11·0	10·6	9·7	7·3	6·4	7·1	8·8	8·9
1935	9·7	11·0	11·7	11·1	10·7	9·9	8·1	6·6	7·5	9·3	9·3
1936	9·7	11·1	11·0	11·0	10·3	10·2	8·7	6·8	8·0	9·6	9·5

[1] Quebec not in National System.
[2] Eight provinces, exclusive of Quebec.
[3] Rates per 1,000 population.

Considering the Registration Area for which the rates derived from one source are available throughout the whole period, it will be observed that the death rates of 1921-23 stood at 10·6 and 10·7. From this level there was a decline continuing to the lowest rate of the period in

1934, 8·9 per thousand, each year between 1923 and 1934 showing a decline from the preceding with the exception of 1926, 1928 and 1929. All three exceptions may be assigned to influenza epidemics of unusual severity, the epidemic of 1928-29, culminating in the early months of the latter year, being particularly noteworthy in this respect. The low and declining death rate through the worst period of the economic depression, as in the United States and other countries, was a phenomenon which attracted much attention. The extraordinarily low death rate of 1934, however, could hardly have been expected to be maintained and 1935 and 1936 each in turn showed some advance.

Death rates which, on the whole, declined throughout the period were the rule in the individual provinces with the exception of Manitoba and British Columbia. In the former case no definite trend is seen and in the latter case the trend appears to be slightly upward, though with rather violent fluctuations. All provinces, however, from Ontario west showed lower rates in 1933 and 1934 than in 1935 and 1936.

The province of Quebec had a death rate of 14·3 per thousand in its first year under the National System of Vital Statistics. This rate was almost 2 per thousand above the next provincial rate in order of size, *viz.*, that of New Brunswick, which was 12·6 per thousand in the same year. During the period 1926-36 Quebec failed in only one year, 1935, to register a lower rate than in the preceding year and the 1936 death rate, 10·3 per thousand, was actually lower than that of any of the Maritime Provinces and only slightly above that of Ontario. The reduction of infant and child mortality in the province of Quebec has undoubtedly had a very important effect on the general death rate.

Trends in Natural Increase.—The rates of natural increase, which, of course, result from the difference between birth rates and death rates, are shown in Statement XIII.

XIII.—RATES[3] OF NATURAL INCREASE, CANADA, PROVINCES AND THE REGISTRATION AREA, 1921-1936

Year	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Registration Area[2]
1921	[1]	10·7	12·6	16·0	[1]	13·5	21·5	22·3	19·7	12·3	15·8
1922	[1]	11·8	11·5	16·4	[1]	12·6	19·4	21·0	18·4	9·7	14·7
1923	[1]	9·5	9·2	14·6	[1]	11·5	18·0	19·0	17·0	9·0	13·2
1924	[1]	10·5	10·1	14·8	[1]	12·6	16·7	19·9	16·4	8·9	13·7
1925	[1]	7·9	10·4	15·3	[1]	11·6	15·2	18·5	17·0	9·2	13·1
1926	13·3	9·8	8·9	13·5	17·3	10·1	14·6	17·8	15·3	7·6	11·7
1927	13·4	9·0	9·2	14·0	17·7	10·2	13·5	17·8	15·5	7·0	11·8
1928	13·0	9·7	9·2	12·7	17·3	9·6	13·7	17·5	15·1	7·0	11·3
1929	12·2	6·2	7·9	12·4	16·0	9·1	12·4	16·7	15·6	6·0	10·8
1930	13·2	9·0	10·0	13·6	16·9	10·0	12·6	17·4	17·1	6·6	11·7
1931	13·1	10·9	11·0	15·1	17·1	9·8	12·9	16·5	16·4	6·2	11·5
1932	12·6	11·0	10·5	15·2	16·9	8·7	12·4	15·8	15·5	5·8	10·8
1933	11·3	10·3	9·8	12·2	15·2	8·0	11·0	15·1	14·5	4·8	9·9
1934	11·1	10·2	10·2	12·9	14·7	7·4	11·4	14·8	14·4	4·7	9·7
1935	10·6	11·6	10·3	13·1	13·9	7·3	10·7	14·4	13·7	4·3	9·3
1936	10·3	10·4	11·0	13·2	14·0	6·7	9·4	13·7	12·4	4·5	8·8

[1] Quebec not in National System.
[2] Eigbt provinces, exclusive of Quebec.
[3] Rates per 1,000 population.

Considering the Registration Area, it is seen that, in spite of the generally declining death rates, the rate of natural increase, which was 15·8 in 1921 and 14·7 in 1922, showed in nearly every year a decline from the preceding year, the only exceptions following "influenza" years, 1923, 1926 and 1929. As a result of this almost uninterrupted decline the rate had fallen to 8·8 per thousand in 1936.

With the exception of the Maritime Provinces, which showed, in general, a downward and then an upward movement throughout the period, all provinces of the Registration Area underwent heavy declines in the rate of natural increase. The outstanding instance is that of Manitoba, which from a rate of 21·5 in 1921 and 19·4 in 1922 fell very rapidly to 13·5 in 1927 and from this point moved slowly and with more fluctuation until it reached a low of 9·4 in 1936. As against this province, which showed the largest decline in the rate, it may be noted that British Columbia showed the largest percentage decline, though the considerable difference between the 1921 rate of 12·3 and the 1922 rate of 9·7 shows that the fall would be much less if the rate were smoothed for trend.

The province of Quebec showed a rather substantial decline in the rate of natural increase which was more than 17 per thousand in the years 1926-28 and again in 1931 but which reached a low of 13·9 in 1935 with a very slight recovery to 14·0 in the next year. Among the provinces of Canada, in some years Saskatchewan's natural increase was greater than Quebec's and in the remaining years was always second to it; the Saskatchewan natural increase, however, resulted from both birth and death rates considerably lower than those of Quebec.

SPECIFIC FERTILITY RATES

Specific Fertility Rates of All Women 15-49 Years of Age for Census and Adjacent Years.—The heavy decline in the rate of natural increase of the eight provinces forming the Registration Area during the period 1921-36 renders it important to examine in detail the factors which produced the decline in the birth rate from which this lowered rate of natural increase sprang, so far as these factors can be measured quantitatively.

Statement XIV presents the specific fertility rates of women of all conjugal conditions in the Registration Area for the census years 1921 and 1931 and for the years adjacent to these with the exception of 1920 for which data are lacking, as the first detailed tabulations of vital statistics, centrally compiled, were for the year 1921. These rates give the number of children born to mothers in a specified age group per 1,000 women in that age group.

XIV.—SPECIFIC FERTILITY RATES[1] OF WOMEN 15-49 YEARS OF AGE (ALL CONJUGAL CONDITIONS), BY AGE GROUP, REGISTRATION AREA, 1921-1922 AND 1930-1932

Year	Age of Mother						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Registration Area[2]—							
1921	37·9	165·1	186·7	155·3	109·9	46·6	6·5
1922	37·1	154·9	179·2	149·7	106·4	46·7	5·4
1930	33·6	140·7	163·1	131·8	89·4	37·6	4·0
1931	33·6	137·1	158·9	125·7	85·0	34·6	4·0
1932	32·4	132·0	154·9	120·1	81·9	34·6	4·1

[1] Rates per 1,000 women of age specified.
[2] Eight provinces, exclusive of Quebec.

It may be noted that the rates for 1922 have been computed on the assumption that the officially estimated population of that year was, as regards sex and age composition, exactly proportionate to the Census population of 1921. For the years 1930 and 1932 a similar assumption was made in relation to the Census of 1931.

Such an assumption evidently involves some degree of error and is not in accordance with the observed fact that the proportion of women of child-bearing ages to the total population showed a slight change between the two censuses or that the relative proportions of five-year age groups among these women also showed some change. It did not, however, appear necessary to make corrections for these facts in the case of years immediately adjacent to the census year.

It will be observed from Statement XIV that in each of the five-year age groups, with the exception of the group 40-44 years, the rate for 1922 is somewhat lower than that for 1921; that in every ease the rates of 1930, 1931 and 1932 are definitely lower than those of 1921 and 1922, and that among the years 1930, 1931 and 1932 the rates also showed some deeline in almost every case. The exceptions are in the 15-19 group between 1930 and 1931, in the 40-44 group between 1931 and 1932 and in the 45-49 group between 1930 and 1931 and, also, between 1931 and 1932. The only advance is in the last case when 1932 shows a rate of 4·1 as against 4·0 for 1931.

Thus, it appears that the ten-year period was one of decline in the fertility of women at the different age groups, most of these age groups showing considerable decline. Further, this secular trend was reflected over the single year periods, 1921-22 and 1930-31-32.

Specific Fertility Rates of All Women for the Average of 1921-1922 and of 1931-1932. —Statement XV contains specific fertility rates for women of all conjugal conditions averaged for the two years 1921-22 and also for the two years, 1931-32. In computing these rates the assumption has again been made that the estimated population of 1922 and of 1932 were divided, by sex and age, in the same proportions as for the Census years 1921 and 1931.

XV.—SPECIFIC FERTILITY RATES[2] OF WOMEN 15-49 YEARS OF AGE (ALL CONJUGAL CONDITIONS), BY AGE GROUP, REGISTRATION AREA AND PROVINCES, FOR THE AVERAGE OF 1921-1922 AND OF 1931-1932

Province and Year	Age of Mother						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Registration Area[3]—							
Average 1921-22	37·5	160·1	183·0	152·6	108·2	46·7	6·0
Average 1931-32	33·0	134·6	156·9	122·9	83·5	34·6	4·1
Prince Edward Island—							
Average 1921-22	22·4	136·3	195·1	186·7	140·5	68·7	7·8
Average 1931-32	30·4	146·2	186·0	179·7	127·8	53·2	4·7
Nova Scotia—							
Average 1921-22	34·8	151·3	183·7	162·3	119·1	53·9	5·7
Average 1931-32	45·5	156·1	172·6	141·2	105·5	47·9	5·7
New Brunswick—							
Average 1921-22	43·8	179·9	225·3	195·9	148·5	66·6	8·5
Average 1931-32	42·8	163·0	204·6	174·5	133·5	66·4	8·0
Ontario—							
Average 1921-22	34·7	144·9	169·3	140·3	96·1	38·7	4·4
Average 1931-32	34·3	124·9	142·1	110·8	72·5	28·0	3·0
Manitoba—							
Average 1921-22	41·0	180·0	205·0	167·6	127·4	57·4	9·2
Average 1931-32	25·1	121·2	154·2	127·1	85·4	36·5	5·0
Saskatchewan—							
Average 1921-22	46·3	205·2	212·8	179·6	135·2	65·5	10·6
Average 1931-32	29·4	155·0	188·7	147·0	108·3	49·1	6·6
Alberta—							
1922[1]	47·2	187·2	194·3	161·0	115·6	55·8	9·6
1932	33·7	155·1	189·2	140·7	93·6	41·2	5·6
British Columbia—							
Average 1921-22	25·5	132·9	149·1	119·1	77·1	30·5	2·9
Average 1931-32	23·5	108·9	125·3	92·2	54·6	20·3	2·2

[1] Figures for Alberta, 1921, are not available by age group; to complete the ten-year period, 1932 figures are used instead of the average for 1931-32. For the Registration Area figures of 1921, the births for Alberta were distributed by age group of mother proportionately to their distribution in 1922.

[2] Rates per 1,000 women of age specified.

[3] Eight provinces, exclusive of Quebec.

It will be noted that two factors which would not normally affect the trend may to some extent reflect in the rates for 1921-22 as against those of 1931-32. The absence of a large number

of single men of marriageable age during the Great War and particularly during its latter part caused a very noticeable decline in the number of marriages, culminating in the year 1918 and the early part of 1919. There followed, of course, in the latter part of 1919, an accumulation of delayed marriages which to some extent proceeded into the latter part of 1920. It will be shown later that, so far as the conjugal condition of the women of child-bearing ages was concerned, this accumulation of delayed marriages fully made up for the marriages which were prevented by war conditions so that at the Census of 1921 the conjugal condition of the women of Canada, *i.e.*, of the eight provinces composing the Registration Area, presented a more favourable condition for high fertility than was true in 1911 or 1931 and probably more favourable than in either 1901 or 1891. The question will naturally arise, however, whether the fertility rates of 1921 were still affected by this accumulation of marriages after the end of the War. Probably they were, but by averaging 1921 with the year 1922 it is thought that this effect is reduced to comparatively small proportions.

Neither can it be ignored that the years 1931 and 1932—coming during the recent economic depression and after the decline in marriages which set in in 1930 had already had time to produce some effect on the births—will, in comparison with 1921-22, represent not only the effect of a general secular trend but also the effect of fluctuation downward due to this depression.

Keeping these facts in mind, we may proceed to compare specific fertility rates for the Registration Area and the eight provinces which it comprises.

In the total of the eight provinces every age group shows a definite decline, even that of the 15-19 group being in the neighbourhood of 11 p.c. Attention is attracted to this group because its behaviour is sometimes contrary to that of the other groups when a general decline in fertility takes place. In the first place, the births to unmarried mothers play a larger part in the fertility of this group than in any other and, secondly,—what is another aspect of the same idea—even when marriage takes place it is more apt than at a later age to be *ad causam* and, consequently, cannot be regarded as reflecting a national or sectional tendency. Attention is called to these facts in order to explain why in some of the provinces the movement in this group is in an opposite direction to that of all other or most other groups.

Coming to the individual provinces, the only exceptions to declines throughout were in Prince Edward Island in the age groups 15-19 years and 20-24 years and in Nova Scotia in the same groups and also in the 45-49 group which gave the same rate in both periods. The decline in New Brunswick and Ontario in the 15-19 group was too slight to have significance. Outside of these cases the declines in specific fertility rates were, in general, rather considerable.

In the Registration Area as a whole the 45-49 group showed the greatest percentage decline between 1921-22 and 1931-32, the percentage decline being 32. In the 40-44 group we have a decline of 26 p.c.; in the 35-39 group, 23 p.c.; in the 30-34 group, 19·5 p.c.; in the 25-29 group, 14 p.c.; in the 20-24 group, 16 p.c.; and in the 15-19 group, 12 p.c. Thus the extent of the decline lessens with comparative regularity from 32 p.c. in the oldest age group to 12 p.c. in the youngest, with the exception that while the 20-24 group showed a decline of 16 p.c. the 25-29 group declined by only 14 p.c.

This trend from age group to age group may possibly be another aspect of a phenomenon to be mentioned later in connection with Order of Births and discussed also in a monograph, *The Canadian Family, viz.*, a tendency to have smaller families rather than no families. Obviously, if this is the real tendency, the age group fertility rates would behave in this way.

In the individual provinces also and particularly in the groups over 25 years, the general tendency was towards heavier percentage declines in the older groups. There were, however, certain irregularities in regard to this rule. The decline in the rate for the youngest age group, 15-19, which took place in only six of the eight provinces was rather insignificant in Ontario, slight in New Brunswick and moderate in British Columbia. In all of these provinces the decline in the rate of the age group 20-24 years was much more marked. But in the three Prairie Provinces, while both the 15-19 and 20-24 groups showed very substantial declines, in each instance they were greater in the younger group.

It has already been mentioned that comparison of the years 1921-22 with the years 1931-32 has certain drawbacks as a measurement of the secular trend during the decade of which these two-year periods formed the beginning and the end. Crude rates have already been presented over the whole period 1921-36 and have been given a brief examination but these rates suffer from the fact that they are affected not only by the trend in fertility, but also by changes in the sex and age composition of the population. Such changes are occurring to a noticeable degree in Canada and a number of the provinces.

BIRTH RATES STANDARDIZED FOR AGE

In order to give a summary view of the changing tendencies in fertility over the period 1921-36 which is largely free from the influence of changes in sex and age composition and at the same time has the advantage over the fertility rates of Statement XV that it is not confined to particular pairs of years each of which may have been subject to influences of a temporary nature, standardized birth rates have been computed and are presented in Statement XVI. For the Registration Area and the eight provinces which compose it, these rates are given for the whole period 1921-36; for Quebec and the total of the nine provinces they are given for the period 1926-36. *The standard population on which these standardized rates are based is the population of all Canada as at the Census of 1931.*

Method of Standardization.—To illustrate briefly the method of their computation, let us consider first the Registration Area. For the years 1921, 1922, 1930, 1931 and 1932, the rates were computed direct from the specific fertility rates of Statement XIV, *i.e.*, the specific rates were applied to the corresponding female age groups of the population of Canada in 1931, the resultant numbers of computed births in the various age groups were added and the total births thus computed at all ages between 15 and 50 years were divided by the total population of Canada to obtain a rate. Standardized rates for the years intervening between 1922 and 1930 were computed on the assumption that the proportion of the standardized to crude rate was moving in an arithmetical progression between the average of 1921-22 and the average of 1930-31, a distance of nine years. Rates for the years following 1932 were computed on the assumption that this proportion of standardized to crude rate continued to move in the same arithmetical progression. This assumption cannot, of course, be regarded as necessarily true but it seems as good as can be made in the absence of more frequent enumerations of the population by age and sex and tends to indicate in a rough manner at least the extent to which the changes in the crude rate are influenced by the change in sex and age composition of the population.

Specific fertility rates similar to those of Statement VI, though not published in this monograph, are available for the individual provinces of Prince Edward Island, Nova Scotia, New Brunswick, Ontario and British Columbia and the computations for these provinces were made in the same manner as for the Registration Area. For the Prairie Provinces the Censuses of 1926 and 1936 were also used, not merely for these years but for the direct computation of rates in the adjacent years.

The specific fertility rates of 1921 and 1922 were not available for Quebec nor for the total of the nine provinces. To obtain standardized rates for these units commencing with 1926, specific fertility rates of 1930-32 were applied to the corresponding female populations of the Census of 1921 and the Census of 1931 and in each case a rate was thus obtained on the total population. The proportion of the standardized birth rate to the crude for the year 1931 was then obtained by direct computation. From this data it was possible to compute the proportion of standardized rate to crude in the year 1921 on the assumption that this proportion would be wholly dependent on the sex and age composition of the population.

It will be observed from the above that the detailed computations of the standardized rates show some variation as between the different units but that the same principle is followed in every case. As already stated, it can only be claimed that the assumption we are making is as good as any that can be made according to the information available. For the very reason of the degree of uncertainty about the assumption made, it was not considered worth while to smooth out the minor roughnesses in the methods which have been indicated above.

XVI.—STANDARDIZED BIRTH RATES,[4] CANADA, PROVINCES AND THE REGISTRATION AREA, 1921-1936

Year	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Registration Area[3]
1921	[1]	26·8	26·0	31·6	[1]	23·6	29·5	31·6	[2]	20·5	25·9
1922	[1]	26·8	25·5	31·2	[1]	22·4	27·9	30·9	28·3	18·9	24·8
1923	[1]	25·4	23·8	29·0	[1]	21·8	26·2	29·1	26·7	18·4	23·6
1924	[1]	24·3	24·3	29·0	[1]	22·0	24·5	29·8	26·0	18·2	23·5
1925	[1]	22·1	23·6	29·6	[1]	21·3	23·5	28·4	26·9	18·2	22·9
1926	24·5	23·0	22·9	27·9	31·2	20·3	22·9	28·1	25·8	17·3	22·0
1927	24·2	22·4	23·3	28·3	30·8	20·0	21·8	27·9	25·6	16·9	21·7
1928	24·0	23·8	23·0	27·0	30·2	20·0	21·8	27·3	25·6	17·1	21·7
1929	23·4	22·1	22·6	27·4	28·7	19·7	21·0	26·8	26·3	16·7	21·5
1930	23·8	23·5	24·3	28·3	28·9	20·3	20·8	26·7	26·1	17·2	22·0
1931	23·2	25·2	24·9	28·8	28·9	19·5	20·4	25·3	24·8	16·1	21·3
1932	22·5	27·2	24·6	28·5	27·4	18·6	19·8	24·4	24·1	15·5	20·6
1933	20·9	26·2	23·7	26·2	25·1	17·4	18·2	23·2	22·3	14·6	19·4
1934	20·6	26·4	24·2	26·3	24·4	16·7	17·9	22·4	22·0	14·7	19·1
1935	20·4	27·4	24·7	26·8	23·6	16·8	17·6	21·7	21·3	14·9	19·1
1936	20·2	26·3	24·8	26·8	23·3	16·6	16·9	21·3	20·6	15·5	18·9

[1] Quebec not in National System. [2] Not available. [3] Eight provinces, exclusive of Quebec. [4] Per 1,000.

Comparison of Standardized with Crude Rates.—For the Registration Area the standardization of rates reduced the difference between the first year, 1921, and the last year, 1936, from 8·1 per thousand to 7·0 per thousand, not a very large difference but indicating that the composition of the population as at the Census of 1931 was less favourable to a high birth rate than that of the census taken ten years earlier. This was true in every one of the eight provinces for which we were dependent on these two censuses alone. In Prince Edward Island the difference between 1921 and 1936 in the crude rates was 2·8; in the standardized, 0·5. In Nova Scotia crude rates showed a difference of 2·9; standardized rates, 1·2; in New Brunswick the difference was 6·0 in the crude rate and 4·8 in the standardized. Ontario showed a decline of 8·4 in the crude rate and of 7·0 in the standardized. British Columbia, 6·2 in the crude and 5·0 in the standardized.

For the Prairie Provinces, as already indicated, we have the advantage of four censuses, pertaining to the years 1921, 1926, 1931 and 1936. The comparison of the differences between the crude rates of census years with the differences between the standardized rates of the same years brings out some rather peculiar facts. The Prairie Provinces enjoyed a comparatively large immigration for some years, the numbers increasing gradually to 1929 and declining sharply thereafter. This is illustrated in Statement XVII.

XVII.—TOTAL IMMIGRANT ARRIVALS DESTINED TO PRAIRIE PROVINCES, 1921 AND 1923-1937

Destination	Fiscal Year Ended March 31															
	1921	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
Manitoba	12,649	6,037	21,451	11,772	19,079	36,739	43,596	57,651	39,132	17,524	1,022	707	553	414	682	1,007
Saskatchewan	13,392	8,186	13,200	14,041	13,816	20,085	15,331	14,789	11,003	5,057	1,177	955	690	493	414	525
Alberta	17,781	8,798	10,430	10,952	12,540	16,367	15,473	16,243	14,970	6,441	2,041	1,635	1,254	1,012	768	923

It would naturally be expected that, as an immigrant population is, to a large extent, in the early adult ages, the falling off of immigration in its proportion to the total population and the ageing of the earlier immigrants would produce a population less favourable to a heavy birth rate. But an examination of the figures does not indicate a development of the age composition as constantly growing more unfavourable to a heavy birth rate. The comparison of 1921 with 1926, it is true, shows what might be expected. In Manitoba the crude rate declined by 7·4 per thousand, the standardized by only 6·6; in Saskatchewan the crude by 4·5, the standardized by 3·5; in Alberta the crude by 3·5*, the standardized by 2·5. In each case the smaller decline of the standardized rate indicates that part of the drop in the crude rate was due to an age composition which was less favourable in the later year. But, if we compare 1926 with 1931 we find in Manitoba a fall of 2·4 in the crude and 2·5 in the standardized; in Saskatchewan a fall of 2·1 in the crude and 2·8 in the standardized; in Alberta a fall of 0·2 in the crude and 1·0 in the standard-

* For Alberta the comparison is between 1922 and 1926 (see footnote to Statement XV).

dized. Again, as between 1931 and 1936 Manitoba shows a fall of 2·4 in the crude and 3·5 in the standardized; Saskatchewan a fall of 2·6 in the crude and 4·0 in the standardized; Alberta a fall of 3·2 in the crude and 4·2 in the standardized. Thus, it is evidenced that while between

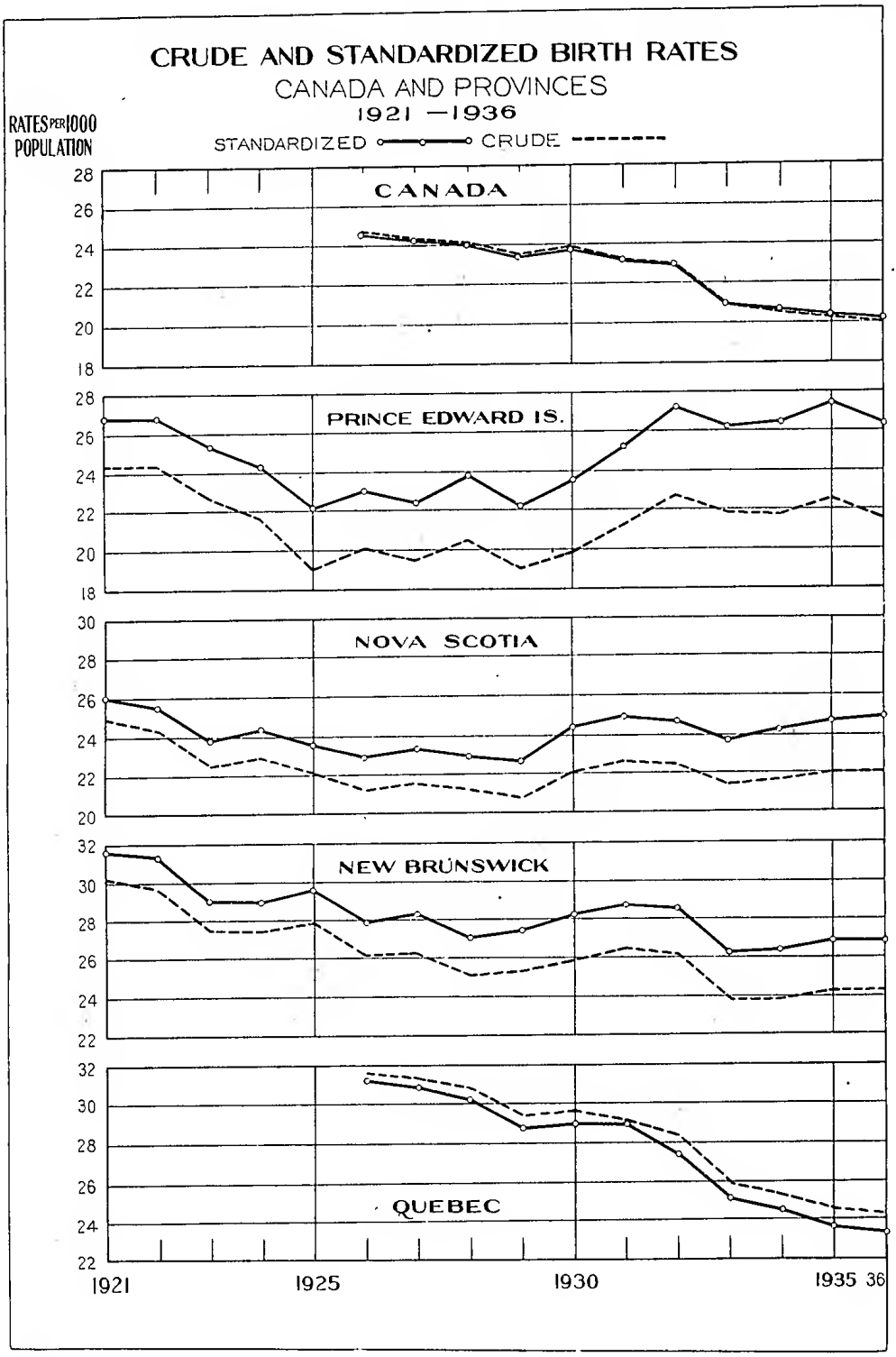


Chart 2

1921 and 1926 the population of each of the Prairie Provinces was becoming less favourably constituted for a high birth rate, a development in the opposite direction took place between 1926 and 1931 and between 1931 and 1936.

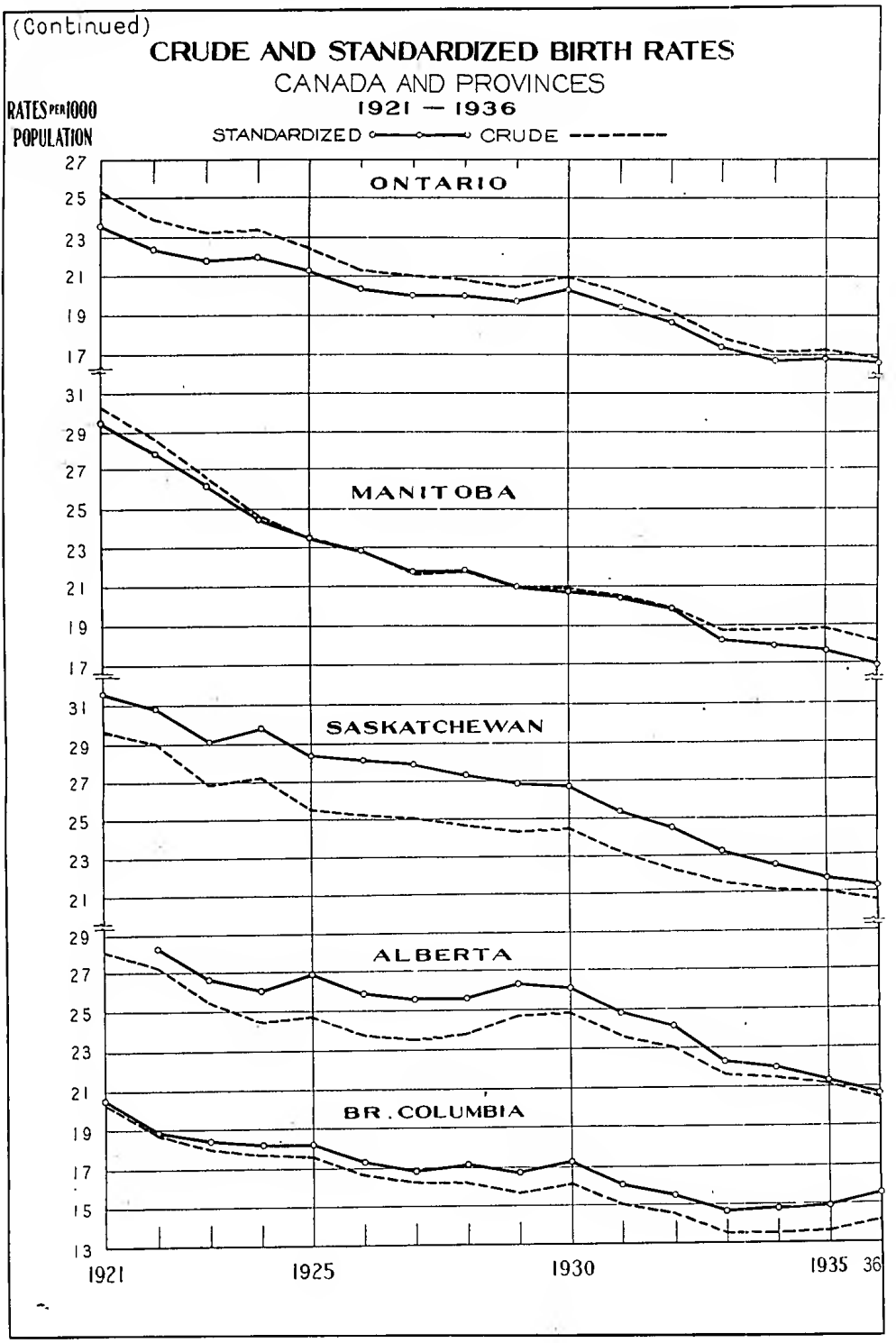


Chart 2—Con.

TRENDS IN FERTILITY AS AFFECTED BY CONJUGAL CONDITION

Specific Fertility Rates of Married Women for Census and Adjacent Years.—So far our analysis has considered only the age composition of the female population and the specific fertility rates and standardized birth rates based on this distribution. It is evident, however, that the conjugal condition of the female population is an important factor in the birth rate and it is necessary to consider to what extent the decline has been due to changes in this respect and to what extent fertility within marriage has lessened. Statement XVIII gives the specific fertility rates of married women in the Registration Area for the census years and years adjacent to the censuses. For 1922, 1930 and 1932 these rates have been computed on the assumption that not only the age composition of females but the composition by conjugal condition in each age group was similar to that of the adjacent census years.

XVIII.—SPECIFIC FERTILITY RATES[1] OF MARRIED WOMEN 15-49 YEARS OF AGE, BY AGE GROUP, REGISTRATION AREA, 1921-1922 AND 1930-1932

Year	Age of Mother						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Registration Area[2]—							
1921	461·0	363·0	260·7	190·4	130·9	55·9	8·0
1922	446·2	340·5	250·2	183·5	126·6	56·1	6·7
1930	486·7	339·8	231·4	160·4	105·1	44·4	4·8
1931	477·4	330·3	225·0	153·0	100·0	40·8	4·8
1932	463·2	316·8	218·8	146·0	96·4	40·7	5·0

[1] Rates per 1,000 married women of age specified.
[2] Eight provinces, exclusive of Quebec.

It will be noted in the first place that between 1921 and 1922 the fertility of each group under 40 years of age showed a measurable decline varying from 3·3 p.c. at ages 35-39 to 6·2 p.c. at ages 20-24. The group 40-44 years showed a very slight increase and the group 45-49 years the heaviest decline of all, 16 p.c. Of course, the number of births in the age group 45-49 years is comparatively small, being only 843 in 1921 and 789 in 1922.

The decline in fertility in all the younger groups between 1921 and 1922 is probably in part due to the secular trend of which the figures a decade later give evidence but it is probably also due in part to a somewhat augmented fertility in 1921 owing to the accumulation of marriages in the immediate post-War period.

Comparing 1930 with 1922, we have, in every age group over 25 years, a marked decline ranging from 7·5 p.c. at 25-29 years to 28 p.c. in the oldest group, 45-49 years. The age group 20-24 years showed practically no decline in fertility and in the group 15-19 years there was an increase of 9 p.c.

A comparison of the fertility rates of married women in the three years 1930, 1931 and 1932 is of particular interest. The lowering of the birth rate from 21·7 in 1930 to 20·2 in 1932, a movement not so notable by reason of its extent as because it marked a departure from the stability of the period 1927-30, may with some reason be attributed largely to the economic depression. The question naturally arises whether the effect of the depression was manifested solely in the reduction of marriages or whether it acted also through a lessening of the fertility within marriage. The figures of Statement XVIII show that in nearly every instance the specific fertility rates of married women were less in 1931 than in 1930 and less in 1932 than in 1931. The sole exception comes in the oldest age group, 45-49 years, the fertility of which in 1930 had shown the greatest decline from 1921 and 1922.

Specific Fertility Rates of Married Women for the Average of 1921-1922 and of 1931-1932.—Keeping in mind what has been shown in Statement XVIII regarding the specific fertility rates for the individual years 1921, 1922, 1930, 1931 and 1932, we may now consider the figures of Statement XIX which presents specific fertility rates for the Registration Area and for each province contained in it averaged for the years 1921-22 and 1931-32.

XIX.—SPECIFIC FERTILITY RATES[2] OF MARRIED WOMEN 15-49 YEARS OF AGE, BY AGE GROUP, REGISTRATION AREA AND PROVINCES, FOR THE AVERAGE OF 1921-1922 AND OF 1931-1932

Province and Year	Age of Mother						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Registration Area[3]—							
Average 1921-22	453·8	351·9	255·5	187·0	128·8	56·0	7·4
Average 1931-32	470·3	323·5	221·9	149·5	98·2	40·7	4·9
Prince Edward Island—							
Average 1921-22	487·5	423·2	317·6	252·5	182·2	87·5	9·7
Average 1931-32	495·1	399·4	290·6	231·5	154·3	66·6	5·9
Nova Scotia—							
Average 1921-22	494·3	373·0	272·9	206·1	144·9	66·2	7·2
Average 1931-32	568·6	377·1	254·0	177·2	126·9	57·5	7·1
New Brunswick—							
Average 1921-22	495·4	407·5	324·2	249·1	180·6	81·1	10·6
Average 1931-32	543·0	402·4	299·6	219·3	158·9	79·7	9·8
Ontario—							
Average 1921-22	493·1	353·5	251·3	180·3	119·5	48·3	5·6
Average 1931-32	493·4	314·5	209·2	139·0	88·2	34·0	3·7
Manitoba—							
Average 1921-22	449·2	372·7	275·4	199·2	147·3	66·4	10·6
Average 1931-32	419·9	328·1	223·4	153·9	98·7	41·9	5·9
Saskatchewan—							
Average 1921-22	402·3	348·1	256·8	198·4	146·8	71·9	11·9
Average 1931-32	422·2	328·7	239·7	164·1	117·2	53·4	7·3
Alberta—							
1922[1]	402·8	320·3	236·4	180·7	126·5	62·2	11·0
1932	412·3	310·0	236·2	157·7	102·5	45·2	6·3
British Columbia—							
Average 1921-22	339·5	283·0	201·9	141·3	89·4	35·5	3·5
Average 1931-32	393·7	265·7	175·0	110·1	63·5	23·7	2·6

[1] See footnote to Statement XV, page 244.
[2] Rates per 1,000 married women of age specified.
[3] Eight provinces, exclusive of Quebec.

In the youngest age group, 15-19 years, every province except Manitoba showed a higher rate in 1931-32, though the difference in Ontario was insignificant and in Prince Edward Island and Alberta very slight. In all other age groups, with the exception of ages 20-24 in Nova Scotia, declines were registered in the later year, varying from a very slight and rather insignificant percentage loss in Alberta in the 25-29 group to a falling off of 44 p.c. in Manitoba in the oldest age group, 45-49 years.

For the Registration Area, the decline increased with increasing age, from 8 p.c. at ages 20-24 to 34 p.c. at ages 45-49. This was also the general tendency throughout the individual provinces, though with some exceptions.

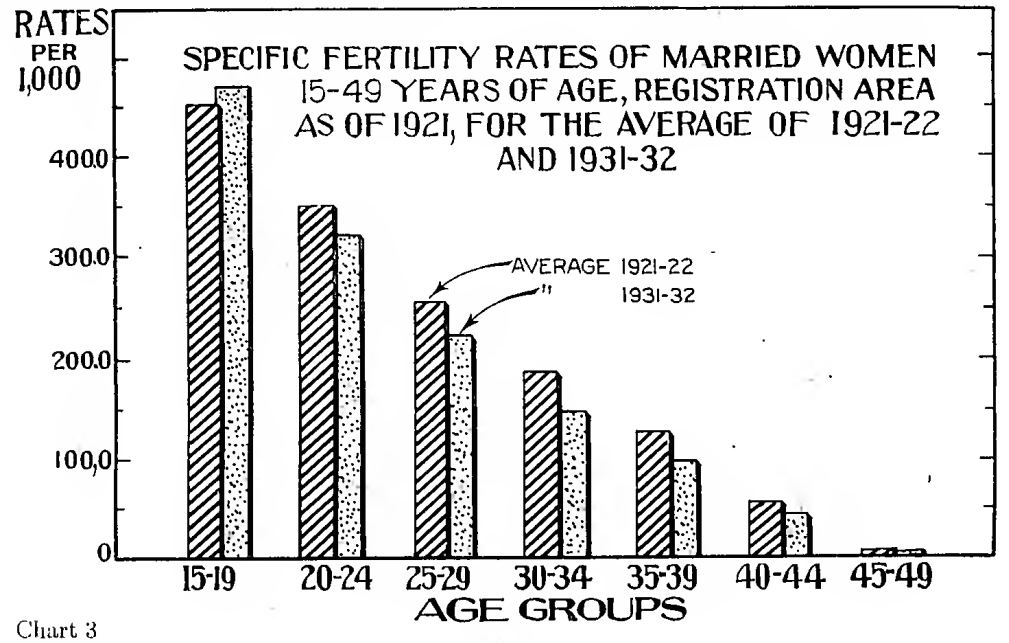


Chart 3

The effect of the different rates of decline in the various age groups for the total of the eight provinces may be seen in an altered relationship between the relative fertility of these groups. Taking the fertility in the age group 20-24 years as 100, the relative fertility of the other groups in 1921-22 and in 1931-32 is shown in the following comparison:—

XX.—SPECIFIC FERTILITY RATES[2] OF MARRIED WOMEN 15-49 YEARS OF AGE, BY AGE GROUP EXPRESSED AS PERCENTAGES OF THE RATE OF THE 20-24 YEAR GROUP, REGISTRATION AREA AND PROVINCES, FOR THE AVERAGE OF 1921-1922 AND OF 1931-1932

Province and Year	Age of Mother						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Registration Area[3]—							
Average 1921-22	129·0	100·0	72·6	53·1	36·6	15·9	2·1
Average 1931-32	145·4	100·0	68·6	46·2	30·4	12·6	1·5
Prince Edward Island—							
Average 1921-22	115·2	100·0	75·0	59·7	43·1	20·7	2·3
Average 1931-32	124·0	100·0	72·8	58·0	38·6	16·7	1·5
Nova Scotia—							
Average 1921-22	132·5	100·0	73·2	55·3	38·8	17·7	1·9
Average 1931-32	150·8	100·0	67·4	47·0	33·7	15·2	1·9
New Brunswick—							
Average 1921-22	121·6	100·0	79·6	61·1	44·3	19·9	2·6
Average 1931-32	134·9	100·0	74·5	54·5	39·5	19·8	2·4
Ontario—							
Average 1921-22	139·5	100·0	71·1	51·0	33·8	13·7	1·6
Average 1931-32	156·9	100·0	66·5	44·2	28·0	10·8	1·2
Manitoba—							
Average 1921-22	120·5	100·0	73·9	53·4	39·5	17·8	2·8
Average 1931-32	128·0	100·0	68·1	46·9	30·1	12·8	1·8
Saskatchewan—							
Average 1921-22	115·6	100·0	73·8	57·0	42·2	20·7	3·4
Average 1931-32	128·4	100·0	72·9	49·9	35·7	16·2	2·2
Alberta—							
1922[1]	125·8	100·0	73·8	56·4	39·5	19·4	3·4
1932	133·0	100·0	76·2	50·9	33·1	14·6	2·0
British Columbia—							
Average 1921-22	120·0	100·0	71·3	49·9	31·6	12·5	1·2
Average 1931-32	148·2	100·0	65·9	41·4	23·9	8·9	1·0

[1] See footnote to Statement XV, page 244.
[2] Rates per 1,000 married women of age specified.
[3] Eight provinces, exclusive of Quebec.

The age group 20-24 years was chosen as the base for this index of relative fertility for the reason that, as already stated, the fertility within marriage of women 15-19 years of age has a somewhat doubtful interpretation. In general, it tends to be lower when marriage at these ages is of comparatively normal occurrence.

It may, therefore, briefly be stated that the differential decline in the fertility of married women at the different ages resulted in a greater superiority of the fertility in the younger age groups in 1931-32 than in 1921-22 (see Chart 4 below). This recalls an observation made on page 245 in regard to an apparent tendency to have small families rather than no families.

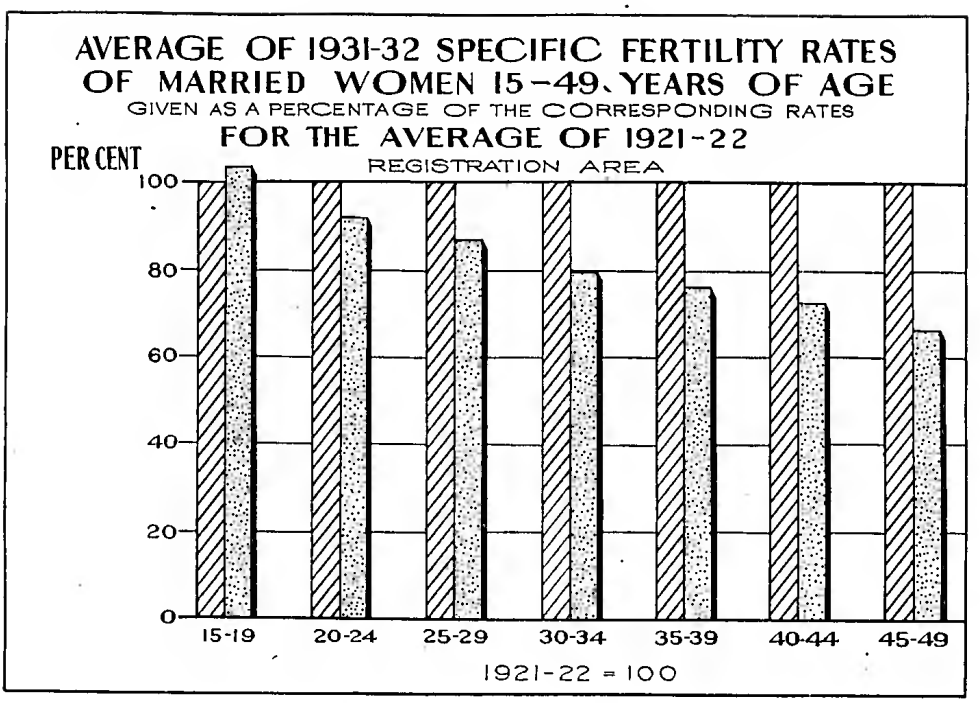


Chart 4

Fertility of Unmarried Women.—The fertility of unmarried women has comparatively small effect on the birth rate in Canada. The ratio of illegitimate births to all live births in the eight provinces composing the Registration Area was 1·97 p.c. in 1921, 2·70 p.c. in 1926, 3·77 p.c. in 1931 and 4·25 p.c. in 1936. This ascending proportion is also noticeable in the province of Quebec over the period commencing with 1926 and in the total of the nine provinces for the same period.

XXI.—PERCENTAGE ILLEGITIMATE BIRTHS FORM OF TOTAL LIVE BIRTHS, CANADA, PROVINCES AND THE REGISTRATION AREA, 1921-1936

Year	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Registration Area[2]
1921	[1]	2·3	3·0	1·7	[1]	2·1	2·3	1·1	1·8	1·2	1·97
1922	[1]	2·6	3·6	1·9	[1]	2·1	2·3	1·2	1·9	1·3	2·05
1923	[1]	2·2	3·8	2·4	[1]	2·3	2·3	1·3	2·0	1·2	2·17
1924	[1]	2·3	4·1	2·3	[1]	2·4	2·7	1·5	2·0	1·7	2·36
1925	[1]	2·3	4·4	2·7	[1]	2·7	2·7	1·7	2·6	2·0	2·62
1926	2·63	2·3	4·4	2·6	2·5	2·7	3·2	1·9	2·8	1·9	2·70
1927	2·87	2·1	5·2	2·8	2·8	2·9	3·3	2·1	2·8	2·0	2·91
1928	3·07	3·0	5·7	3·0	2·9	3·2	3·5	2·2	3·0	2·6	3·17
1929	3·19	2·4	5·2	3·1	2·9	3·5	3·6	2·5	3·2	2·6	3·35
1930	3·31	2·3	4·9	3·0	3·0	3·7	3·7	2·8	3·2	2·4	3·47
1931	3·48	3·8	5·4	3·4	2·9	4·0	3·6	3·0	3·7	2·8	3·77
1932	3·59	3·7	5·5	3·4	3·0	4·2	3·6	3·1	3·6	3·4	3·93
1933	3·78	3·0	6·0	3·6	3·2	4·4	3·8	3·2	3·9	3·7	4·11
1934	3·65	4·3	5·8	3·6	3·1	4·0	3·8	3·4	3·6	3·5	3·96
1935	3·77	4·1	5·7	3·9	3·3	4·2	3·5	3·3	3·8	3·2	3·99
1936	3·92	3·4	6·1	3·9	3·3	4·5	3·8	3·7	3·8	3·6	4·25

[1] Quebec not in National System. [2] Eight provinces, exclusive of Quebec.

In the matter of illegitimate births it is probable that the increase is not wholly true but is in part attributable to better registration of these births. It is not merely a question of ensuring that the birth is registered but also the checking on false registration as legitimate. It is known that efforts in this direction have produced some results, though their extent is not measurable. Nevertheless, it would appear that there has also been a steady increase in the proportion of births to unmarried women as compared with all live births. In part, again, this increase may be attributed to the decline in the legitimate birth rate.

The illegitimate birth rate computed as for Statement XXI has importance as indicating what proportion of the generation which is being produced will suffer from the disadvantages

attending on illegitimacy, disadvantages which, however, have been lessened by statutory provisions in every province for the support of such children by the mother and the putative father.

We may, however, compute a rate of births to unmarried mothers in the same manner as the specific fertility rates which have already been presented for married women. Such rates for unmarried women are given in Statement XXII for the Registration Area and for each province contained in it. The rates are for the average of 1921-22 and of 1931-32.

XXII.—SPECIFIC FERTILITY RATES[3] OF UNMARRIED WOMEN 15-49 YEARS OF AGE, BY AGE GROUP, REGISTRATION AREA AND PROVINCES, FOR THE AVERAGE OF 1921-1922 AND OF 1931-1932

Province and Year	Age of Mother						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Registration Area[4]—							
Average 1921-22	4·9	8·3	6·0	5·5	3·7	1·3	1
Average 1931-32	6·4	11·8	10·2	7·7	5·5	2·4	0·3
Prince Edward Island—							
Average 1921-22	4·2	8·6	8·2	1	–	–	–
Average 1931-32	7·4	11·7	12·7	1	1	–	–
Nova Scotia—							
Average 1921-22	6·9	12·5	8·0	5·8	3·8	1	1
Average 1931-32	10·5	17·3	17·2	9·2	7·9	1	–
New Brunswick—							
Average 1921-22	4·5	8·9	6·3	1	1	1	–
Average 1931-32	7·7	12·3	10·5	8·1	7·3	1	1
Ontario—							
Average 1921-22	4·9	7·2	5·3	4·5	3·0	0·8	1
Average 1931-32	7·2	11·3	9·2	6·7	4·0	2·1	1
Manitoba—							
Average 1921-22	5·7	11·7	8·6	8·9	6·5	1	1
Average 1931-32	5·1	9·8	7·4	7·3	5·9	1	1
Saskatchewan—							
Average 1921-22	4·0	6·4	6·0	9·6	6·2	1	–
Average 1931-32	4·7	12·5	12·5	11·7	11·7	5·1	1
Alberta—							
1922[2]	5·4	12·3	9·3	9·2	1	1	–
1932	5·8	15·4	15·6	10·7	12·0	1	–
British Columbia—							
Average 1921-22	3·2	4·1	2·9	3·6	1	1	–
Average 1931-32	3·3	7·3	7·3	7·6	4·7	1	1

[1] Absolute figure less than 20.
[2] See footnote to Statement XV, page 244.
[3] Rates per 1,000 unmarried women of age specified.
[4] Eight provinces, exclusive of Quebec.

It will be observed that whereas the specific fertility rates for married women were highest for ages 15-19, these for unmarried women were generally highest for ages 20-24.

Considering the Registration Area every age group shows a pronounced advance in the rate for 1931-32 over that of 1921-22. The greatest increase was in the 40-44 group; absolute figures are small, the aggregate of 1921-22 being 76 births and of 1931-32, 171 births. The increase next in magnitude was in the 25-29 group where the rate for 1931-32 was 70 p.c. more than in 1921-22. Rates for age group 20-24 years and for those between 30 and 40 years increased between 40 and 50 p.c. and the increase in the youngest age group of all was but slightly over 30 p.c.

Every province except Manitoba showed increased rates in almost all age groups. Manitoba, however, showed a definite decline in the rate for each age group.

OTHER FACTORS AFFECTING TREND IN FERTILITY

It has been seen from Statement XXI that births to unmarried women play a comparatively small part in determining the birth rate of Canada. Statement XX has shown that during the decade between 1921-22 and 1931-32 an important decline took place, in general, in the specific fertility rates of married women. It will now be appropriate to consider other factors which affected the decline in the crude birth rate during this decade. It is proposed to consider the following factors:—

(1) The proportion of women of child-bearing ages to the total population;
(2) The proportion of women of child-bearing ages who were married;
(3) The age distribution of the married women of child-bearing ages;
(4) The specific fertility rates of married women of child-bearing ages. (This has already been dealt with as an isolated fact.)

Proportion of Women of Child-Bearing Ages to the Total Population.—Considering, first, the proportion of women of child-bearing ages to the total population, it may be interesting to examine the proportions which have been shown at recent censuses of various countries. These are given in Statement XXIII.

XXIII.—PERCENTAGE PROPORTION OF WOMEN 15-49 YEARS OF AGE TO TOTAL POPULATION IN VARIOUS COUNTRIES AT RECENT CENSUSES

Country	Proportion of Women 15-49 to Total Population	Year of Census	Country	Proportion of Women 15-49 to Total Population	Year of Census
Switzerland	28·2	1930	Australia	26·3	1933
England and Wales	28·0	1931	Greece	26·3	1928
Germany	28·0	1933	Northern Ireland	26·2	1926
Belgium	27·8	1920	Norway	26·2	1930
Austria	27·4	1934	Union of South Africa (Whites)	26·0	1931
France	27·2	1926	The Netherlands	25·9	1930
Scotland	27·0	1931	Italy	25·5	1921
Finland	26·9	1930	Egypt	24·8	1927
Sweden	26·7	1930	Bulgaria	24·7	1934
United States	26·6	1930	Canada (Registration Area)	24·7	1931
Poland	26·5	1931	Eire	23·8	1926
New Zealand	26·4	1926			

For this purpose the child-bearing period has been taken, as in the other computations in this monograph, from the 15th to the 50th birthday. It will be observed that for the countries selected in the statement the proportion varies from a low of 23·8 p.c. in Eire to a high of 28·2 p.c. in Switzerland. Obviously, this proportion is affected by several factors. Where fertility rates are heavy there will be an obvious tendency toward an increase in the proportion of children in the population and a corresponding decrease in the proportion of adults at the reproductive ages. The war losses have had considerable effect on the sex proportion of some countries, tending to raise the proportion of women to the total population and thus of women of child-bearing ages. Again, the lengthening of human life must to some extent tend towards a decrease in the proportion shown in the statement by increasing the relative number of aged persons. Obviously, if sex proportions, tendency to marry, age distribution of females in the child-bearing ages and their fertility within marriage were equal in two countries, the one with a proportion of 28 p.c. of women of child-bearing ages should have a crude birth rate one-sixth greater than that of a country with the corresponding proportion only 24 p.c.

This proportion may also be of some service as giving a rough but definite meaning to a crude birth rate of a given size. If, say, 25 p.c. of the total population consists steadily of women between the ages of 15 and 50 and if, on the average, each of these women gave birth to one living child every five years during the period, making seven births in all, then the crude birth rate should be about 50 per thousand, a figure considerably above that recorded for any of the countries in Statement I.

Statement XXIV shows the proportion of women of child-bearing ages to the total population in the Registration Area and the eight provinces contained in it, as shown by the Census of 1921 and the Census of 1931. For 1921, the proportion ranges from 22·0 in Saskatchewan to 25·7 in Ontario.

XXIV.—PERCENTAGE PROPORTION OF WOMEN 15-49 YEARS OF AGE TO TOTAL POPULATION, REGISTRATION AREA, CANADA AND PROVINCES, 1921 AND 1931

Province	1921	1931	Province	1921	1931
Registration Area	24·4	24·7	Registration Area—Con.		
Prince Edward Island	22·8	21·9	Saskatchewan	22·0	23·2
Novn Scotia	23·6	23·0	Alberta	22·9	23·7
New Brunswick	23·4	23·1	British Columbia	24·1	24·3
Ontario	25·7	25·7	Quebec	24·2	25·0
Mnnitoba	24·2	25·4	CANADA	24·3	24·8

Comparing the two censuses, it is observed that the total of the eight provinces showed a slightly higher proportion in 1931 and that the individual provinces varied in the direction of the change. The change in the decade shows an interesting East to Middle West trend, setting out with a rather heavy decline in Prince Edward Island and ending with a somewhat heavier increase in Saskatchewan. This trend is slightly interrupted by the fact that Quebec and Ontario interchange positions. The latter is the pivot point between decrease and increase while Quebec shows the western tendency. This trend is all the more interesting in that it is consistent with the behaviour observed in other attributes of the population, even to the slight fading away in Alberta and British Columbia. The second greatest proportional change was in Manitoba,

where the proportion increased from 24·2 p.e. to 25·4 p.e. but, while the movement of the erude birth rate in Manitoba during the period was markedly downward, the ehange in the proportion of women of child-bearing ages would not of itself have affected the erude birth rate by more than about 5 p.e. Examination of the figures, therefore, leads to the conclusion that a change in the proportion of the women of child-bearing ages to the total population had little effect in either aeeelerating or retarding the fall in the erude birth rate during the decade.

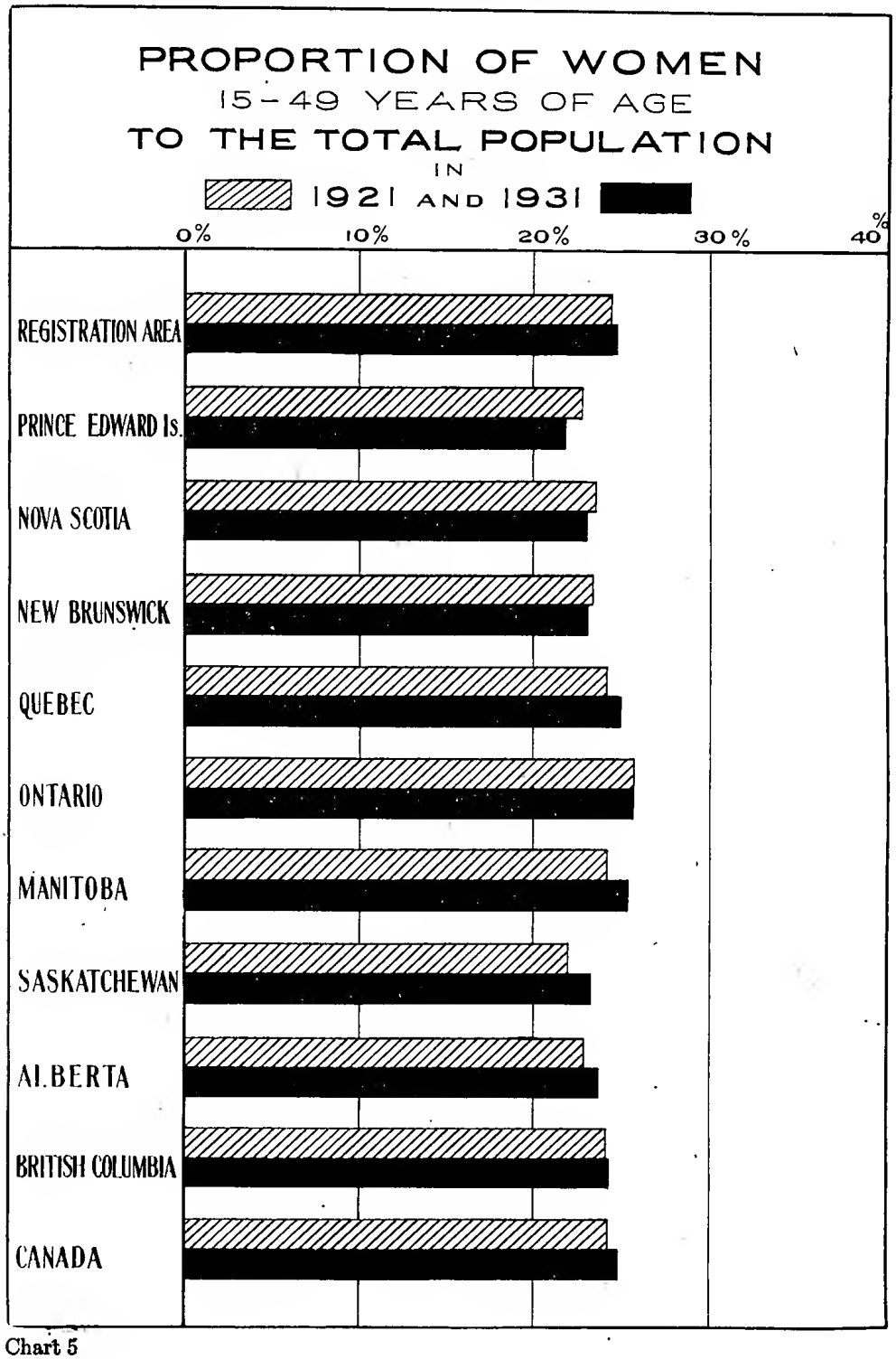


Chart 5

Proportion of Women of Child-Bearing Ages Who Were Married.—We must next consider the change in the proportion of women of child-bearing ages who were married in 1921 and 1931. The figures are given in Statement XXV. For convenience of reference in connection with certain remarks which will be made, the proportions for 1911 are also included.

XXV.—PERCENTAGE OF MARRIED WOMEN 15-49 YEARS OF AGE TO ALL WOMEN, BY AGE GROUP, REGISTRATION AREA, 1911, 1921 AND 1931

Age Group	1911	1921	1931	Age Group	1911	1921	1931
15-49	56·7	61·0	58·6	15-49—Con.			
15-19	7·6	7·3	5·7	35-39	80·6	83·5	84·1
20-24	40·1	44·2	39·4	40-44	80·7	82·9	84·0
25-29	66·3	70·9	69·3	45-49	79·0	80·6	82·2
30-34	77·1	81·0	81·3				

In spite of the effect of the War in delaying or preventing marriages and of the loss of a considerable number of men eligible for marriage, the Census of 1921 presented a picture of the conjugal condition of the female population more favourable to high fertility not only than that of 1931 but also, and in still greater degree, than the Census of 1911. This may be contrary to the general opinion which perhaps holds that, decade by decade, the tendency to marry late and in some cases to remain celibate is increasing. This tendency is certainly evinced for the female population between 1921 and 1931, the former census showing higher proportions married in the three age groups under 30, almost equal in the age group 30-34 years and somewhat inferior proportions in the three highest age groups. But the comparison with 1911 has already shown that the conjugal condition of the women of 1921 was more favourable than ten years before and, as the comparison between 1911 and 1931 is, on the whole, in favour of the latter, though not in the two first age groups, we must avoid considering the change between 1921 and 1931 as part of a long time trend.*

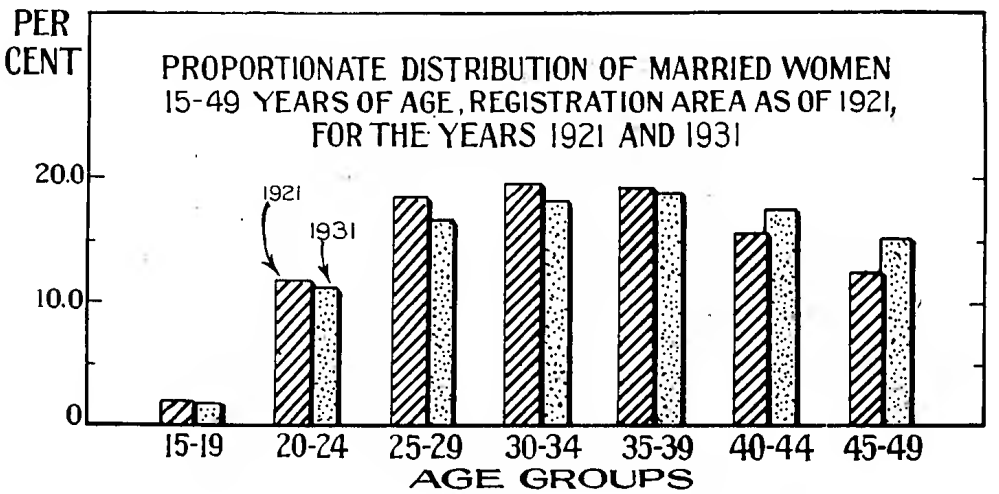


Chart 6

Statement XXVI shows for provinces the data that Statement XXV shows for the whole Registration Area. It will be readily seen that the comments on trend in the latter statement apply to the former as well.

* See also Volume I, Census of Canada, 1931, Chapter LV.

XXVI.—PERCENTAGE OF MARRIED WOMEN 15-49 YEARS OF AGE TO ALL WOMEN, BY AGE GROUP, REGISTRATION AREA AND PROVINCES, 1921 AND 1931

Age Group	Registration Area[1]	Prince Edward Island	Nova Scotia	New Brunswick	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
				1921					
15-49	61·0	51·1	54·8	56·4	58·2	62·8	69·3	69·2	66·3
15-19	7·3	3·8	5·7	8·0	6·1	8·0	10·6	10·5	6·6
20-24	44·2	30·8	38·5	42·9	39·8	46·6	58·2	56·8	46·2
25-29	70·9	60·4	66·3	68·9	66·7	73·6	82·5	81·5	73·4
30-34	81·0	73·1	78·1	78·4	77·3	83·4	90·0	88·5	83·9
35-39	83·5	77·1	81·7	81·9	79·9	85·9	91·7	90·7	86·0
40-44	82·9	78·5	80·8	81·6	79·6	85·9	90·8	89·4	85·9
45-49	80·6	81·1	78·7	80·2	77·6	85·4	88·8	87·0	82·9
				1931					
15-49	58·6	53·4	55·0	55·2	58·0	56·3	61·1	63·1	60·9
15-19	5·7	4·7	6·3	6·6	5·6	4·8	5·0	6·8	5·2
20-24	39·4	34·7	38·6	38·6	37·5	35·0	45·1	47·4	30·3
25-29	69·3	62·4	65·7	67·2	66·5	68·0	77·6	78·7	70·3
30-34	81·3	76·9	78·5	78·8	78·7	81·8	88·8	88·4	82·5
35-39	84·1	82·7	82·0	83·3	81·4	85·7	91·6	90·1	84·9
40-44	84·0	79·0	82·2	82·9	81·1	86·5	91·2	90·0	84·9
45-49	82·2	79·9	79·9	80·8	79·3	84·1	89·9	88·2	84·0

[1] Eight provinces, exclusive of Quebec.

It is impossible to carry comparisons back farther than 1911 for individual age groups or for the total of the child-bearing ages. It may be interesting, however, to compare the proportion of married women in the total population in the years 1891, 1901, 1911 and 1931 with the corresponding proportion in 1921. As the census reports of 1891 and 1901 do not show conjugal condition by age, a fair comparison can only be effected by using the method of expected numbers. That is to say, working with the results of the Census of 1921 as the standard, we apply the percentage of married women in each age group to the corresponding numbers of women in the same age groups at the other censuses to determine how many in each group we should expect to find married if conditions in this respect were exactly as in 1921. Adding the expected numbers in the various age groups together, we obtain the total number of females we might expect to find married on this basis and compare the actual total number at each census with this expected total number. By this method, of course, the computation can be made only for the total of females, not merely for those of child-bearing ages.

XXVII.—ACTUAL NUMBER OF MARRIED WOMEN IN THE REGISTRATION AREA, 1891, 1901, 1911 AND 1931, BY QUINQUENNIAL AGE GROUPS, COMPARED WITH THE NUMBER EXPECTED FROM THE PROPORTION MARRIED IN EACH AGE GROUP, 1921

Age Group	Female Population, All Conjugal Conditions				Proportion Married at Census of 1921	Expected Number Married at Census of			
	1891	1901	1911	1931		1891	1901	1911	1931
15 and over	1,021,187	1,180,912	1,592,236	2,456,895	-	583,877	687,771	948,706	1,464,648
15-19	173,902	187,054	229,030	361,437	7·26	12,625	13,580	16,628	26,240
20-24	164,328	174,597	228,690	310,618	44·17	72,584	77,119	101,012	137,200
25-29	134,075	144,058	210,903	262,595	70·95	95,126	102,209	149,636	186,311
30-34	106,182	123,117	180,114	244,273	81·03	86,039	09,762	145,946	107,934
35-39	88,494	112,090	154,491	244,089	83·53	73,910	93,629	129,046	203,888
40-44	77,133	97,168	130,431	224,014	82·89	63,936	80,543	108,114	185,685
45-49	64,897	79,275	112,310	200,451	80·61	52,313	63,904	90,533	161,584
50-54	58,358	68,411	96,670	168,413	75·97	44,335	51,972	73,440	127,943
55-59	42,622	54,602	71,706	125,814	71·38	30,424	38,975	51,184	89,806
60-64	40,049	48,440	59,755	103,556	62·06	24,854	30,062	37,084	64,267
65-69	27,177	35,537	40,402	83,076	52·67	14,314	18,717	23,913	43,756
70-74	20,530	26,135	33,367	62,845	40·25	8,263	10,519	13,430	25,295
75-79	12,146	16,318	21,044	36,216	28·30	3,437	4,618	5,955	10,249
80-84	7,023	9,125	11,563	18,696	18·10	1,271	1,652	2,093	3,384
85 and over	4,271	4,985	6,760	10,802	10·24	437	510	692	1,106
Actual number of women married						528,899	625,132	911,205	1,456,401
Proportion of actual to expected						90·58	90·89	06·05	99·44

As already indicated, the results of this comparison are somewhat surprising in view of the opinion generally held that larger proportions of women are unmarried in recent years than a generation or two ago. The comparison is limited to the Registration Area in view of the fact that this is the area with which we are dealing in the analysis of fertility. The Census of 1891 shows the number of married women in this area forming only 90·6 p.c. of the number which would be expected if the ratios of 1921 held true in the various five-year groups commencing with the 15-19 group. For the Census of 1901 the actual number was very slightly larger in proportion to the expected, 90·9 p.c. The year 1911 showed the actual number married as 96 p.c. of the expected. While the year 1931 showed a number of married women smaller than the expected number based on the ratios of 1921, the difference between actual and expected was very much less than in the censuses earlier than 1921, the ratio of actual to expected in 1931 being 99·4 p.c.

From the closeness of the actual to the expected number in 1931, on the basis of 1921 ratios, it might seem at first glance as though conjugal condition of the female population was a very slight factor in the decline of the birth rate during the decade. It must be considered, however, in the first place that the computation just given was for women of all ages whereas only the conjugal condition of the women of child-bearing ages can have any effect on the birth rate. Statement XXV shows that at all ages between the 15th and the 50th birthday, 61·0 p.c. of the women were married in 1921 and only 58·6 p.c. in 1931. Moreover, if we examine the figures of Statement XXV by age groups, it will be observed that the two youngest age groups, 15-19 years and 20-24 years, show a substantial decline in the proportion of women married, that the 25-29 group shows a comparatively slight decline and the four older age groups show increases, ranging from very slight in the 30-34 group to moderate in the oldest age group.

A result of this decrease in the proportion of women married in the younger groups and the increase in the older groups has been to alter the age distribution of the married women of child-bearing ages between 1921 and 1931 in a way that is less favourable to high fertility, since the younger groups are more fertile. This fact is brought out in Statement XXVIII which shows, for the Registration Area and for the eight provinces which it contains, the percentage distribution in 1921 and 1931 of the married women between the 15th and 50th birthdays according to age within these limits.

XXVIII.—PERCENTAGE DISTRIBUTION OF MARRIED WOMEN 15-49 YEARS OF AGE, BY AGE GROUP, REGISTRATION AREA AND PROVINCES, 1921 AND 1931

Age Group	Registration Area[1]	Prince Edward Island	Nova Scotia	New Brunswick	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
				1921					
15-49	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
15-19	2·1	1·6	2·2	3·0	1·8	2·3	2·8	2·6	1·5
20-24	11·8	10·5	12·7	13·8	11·2	12·0	13·6	12·9	9·8
25-29	18·6	18·0	18·6	18·8	18·2	19·5	19·9	19·2	16·7
30-34	19·7	17·5	18·1	18·0	19·5	20·4	20·7	20·5	20·2
35-39	19·3	18·9	18·4	17·9	19·2	19·5	19·3	19·4	21·5
40-44	15·9	17·1	15·8	15·3	16·4	15·0	14·2	14·9	17·5
45-49	12·6	16·5	14·3	13·2	13·7	11·2	9·6	10·4	12·8
				1931					
15-49	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
15-19	1·9	2·0	2·5	2·6	1·7	1·8	2·2	2·3	1·5
20-24	11·3	10·8	12·1	12·5	10·5	11·1	13·1	13·2	10·2
25-29	16·8	15·3	16·4	17·0	16·7	16·8	17·5	18·0	15·5
30-34	18·3	17·9	17·9	18·1	19·0	17·7	17·8	18·0	17·4
35-39	19·0	20·2	19·0	19·0	19·3	19·3	18·4	17·9	19·(
40-44	17·4	17·4	16·8	16·2	17·5	17·9	16·8	16·5	18·8
45-49	15·2	16·6	15·4	14·6	15·2	15·4	14·2	14·2	17·7

[1] Eight provinces, exclusive of Quebec.

Considering the Registration Area, the age groups under 40 show a smaller proportion to the total in the later year while the converse is true for the older age groups. Thus the age group 45-49 years which has very little importance in relation to fertility contained 12·6 p.c. of the married women of child-bearing ages in 1921 and 15·2 p.c. in 1931. Throughout the provinces the tendency has been in general the same with occasional exceptions for certain age

groups and in some cases a much more pronounced change in the proportion of the older groups. Thus, in Saskatchewan the least fertile age group contained only 9·6 p.c. of the total in 1921 and 14·2 p.c. in 1931.

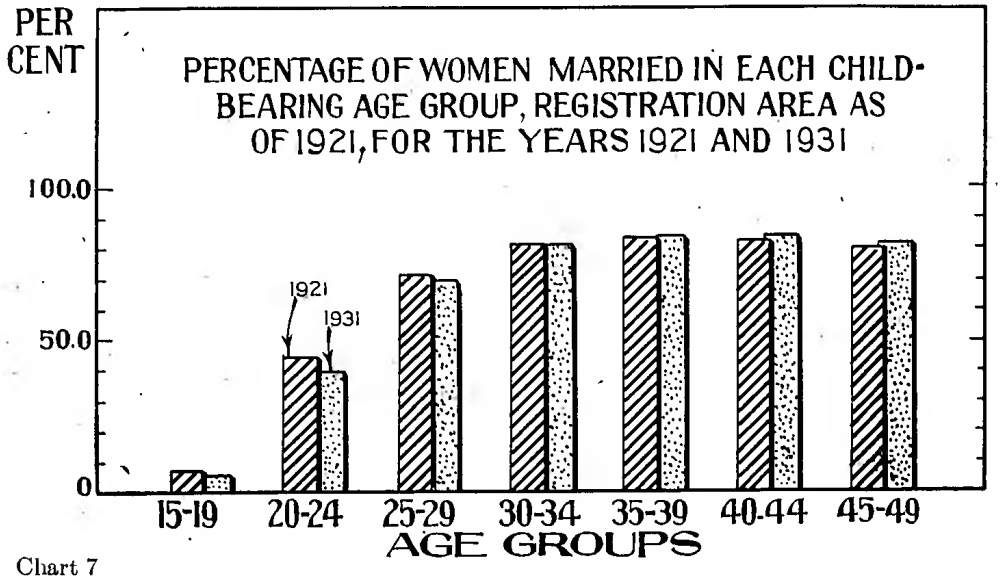


Chart 7

SUMMARY OF FACTORS AFFECTING THE CANADIAN BIRTH RATE

We are now in a position to consider the individual and joint effect of five factors affecting the crude birth rates of 1921-22 and 1931-32. It will be noted that the factors which result from different proportions at the Census of 1921 and the Census of 1931 are quite applicable to the birth rates for the average of two years, 1921-22 and 1931-32 because specific fertility rates have been computed on the assumption that the proportions by age and conjugal condition were the same in 1922 as in 1921 and in 1932 as in 1931.

The factors are as follows:—

A—the change in the proportion of women of child-bearing ages to the total population;

B—the change in the proportion of married women to all women within the child-bearing ages;

C—the change in the age distribution of married women of child-bearing ages;

D—the change in the fertility of married women of child-bearing ages;

E—the change in the proportion of total births to legitimate births.

The proportion of women of child-bearing ages in 1921 and 1931 has been shown in Statement XXIV.

The proportion of married women to all women within child-bearing ages and to all women within each age group of the child-bearing ages has been shown in Statement XXVI for the Censuses of 1921 and 1931.

The age distribution of married women by age groups within the child-bearing ages in 1921 and 1931 has been shown in Statement XXVIII.

The specific fertility rates of married women of the child-bearing ages in 1921-22 and 1931-32 have been shown in Statement XIX.

The proportion of total live births to legitimate births for 1921-22 and 1931-32 has been computed directly from the births of these years.

Before considering the relationship of each factor to the total decline in the birth rate, we shall discuss the total fertility of married women between the 15th and 50th birthdays as affected, (1) by the change in their specific fertility rates and (2) by the change in their age distribution. The figures of Statement XXIX contain the results of such an analysis. The specific fertility rates of 1921-22 are applied first to the age distribution of the married women of child-bearing ages in 1921 and give a total fertility rate for the Registration Area of 170·2 per thousand. The same fertility rates, however, when applied to the age distribution of 1931 give a total ertility rate for all women of child-bearing ages of 160·9 per thousand. In similar manner, the

specific fertility rates of 1931-32, applied to the age distribution of 1921, give a total fertility rate of 144·8 for the women of child-bearing ages whereas, applied to the actual age distribution of 1931, they give a total fertility of only 136·8. The lower total fertility in the second column in the statement is, of course, due to the more unfavourable age distribution in 1931 than in 1921.

XXIX.—TOTAL FERTILITY RATES[1] FOR THE CHILD-BEARING AGES, 1921 AND 1931, BASED ON (A) FERTILITY RATES OF 1921-1922 AND (B) FERTILITY RATES OF 1931-1932, REGISTRATION AREA AND PROVINCES

Province	With Fertility Rates of 1921-22 and		With Fertility Rates of 1931-32 and	
	Age Distribution of 1921	Age Distribution of 1931	Age Distribution of 1921	Age Distribution of 1931
Registration Area[2]	170·152	160·872	144·810	136·810
Prince Edward Island	204·032	202·871	184·197	182·118
Nova Scotia	184·236	178·900	173·140	167·853
New Brunswick	223·268	213·007	209·526	199·594
Ontario	160·755	154·088	132·287	126·455
Manitoba	189·471	172·922	150·157	136·258
Saskatchewan	190·477	175·488	169·090	154·943
Alberta	169·313	161·071	155·664	147·727
British Columbia	120·877	114·099	101·529	96·348

[1] Rates per 1,000 married women 15-49 years of age.
[2] Eight provinces, exclusive of Quebec.

Individual and Joint Effects of Factors.—We may now consider the individual and joint effects of factors A to E as shown in Statement XXX.

XXX.—ANALYSIS OF PERCENTAGE CHANGE IN CRUDE BIRTH RATES BETWEEN 1921-1922 AND 1931-1932, REGISTRATION AREA AND PROVINCES

Province	Crude Rates of 1931-32 as Percentage of Rates of 1921-22	Effect of Each Factor Contributing to Change in Percentage of Crude Rates, if Working Alone							Product of Factors A-E[3]
		A	B	C		D		E	
				First Method	Second Method	First Method	Second Method		
Registration Area[2]	79·8	101·19	96·07	94·48	94·55	85·11	85·04	101·91	79·7
Prince Edward Island	90·8	96·14	104·50	98·87	99·43	90·28	89·77	101·31	90·9
Nova Scotia	91·6	97·79	100·36	96·94	97·10	93·98	93·82	102·26	91·4
New Brunswick	87·9	98·76	97·87	95·26	95·40	93·85	93·70	101·64	87·8
Ontario	80·0	99·73	99·66	95·59	95·85	82·29	82·07	102·07	79·8
Manitoba	68·6	105·17	89·65	90·74	91·27	79·25	78·80	101·32	68·7
Saskatchewan	77·4	105·83	88·17	91·63	92·13	88·77	88·29	101·99	77·4
Alberta[1]	84·1	103·89	91·18	94·91	95·13	91·94	91·72	101·82	84·2
British Columbia	75·5	100·95	91·86	94·90	94·39	83·99	84·44	101·90	75·3

[1] 1922-32 used for Alberta (see footnote to Statement XV, page 244.
[2] Eight provinces, exclusive of Quebec.
[3] First method of calculating factors C and D used.

A—Change in proportion of women of child-bearing ages (15-49 years) to total population.
B—Change in proportion of married women to all women within child-bearing ages.
C—Change in age-distribution of married women of child-bearing ages (second method used for product).
D—Change in specific fertility rates of married women of child-bearing ages (second method used for product).
E—Change in proportion of total births to legitimate births.

Taking again the Registration Area as an example, we observe first that the crude birth rate of 1931-32 was 79·8 p.c. of the crude birth rate of 1921-22.

Factor A, the change in the proportion of women of child-bearing ages to the total population, would, if acting alone, have accounted for an increase of 1·19 p.c. in the crude birth rate since this proportion was slightly greater in 1931 than in 1921.

Factor B, if acting alone, would have reduced the crude birth rate of 1931-32 to 96·07 p.c. of what it was in 1921-22 since the proportion of married women to all women within the child-bearing ages declined between 1921 and 1931.

The effect of factor C, the change in the age distribution of married women of child-bearing ages, can be obtained in two ways, each equally legitimate: either by dividing 160·9 by 170·2 or by dividing 136·8 by 144·8. (For the purpose of division the figures of Statement XXIX were carried to three decimal places.) In the first instance we have a quotient of 94·48 p.c.; in the second, of 94·55 p.c.

Factor D, the change in specific fertility of married women of child-bearing ages, is also obtained in two ways, each equally legitimate, from the figures of Statement XXIX. We may

divide 144·8 by 170·2 or 136·8 by 160·9. In the first case we obtain a quotient of 85·11 p.c.; in the second case, of 85·04 p.c.

Factor E, the effect of the change in proportion of total births to legitimate births, is obtained directly from the aggregate of legitimate and illegitimate births for the two years 1921-22 and the two years 1931-32. For the Registration Area in 1921-22 illegitimate births formed 2·05 p.c. of legitimate births; in 1931-32 they formed 4·00 p.c. of the legitimate. The division of 104·00 by 102·05 gives a quotient of 101·91 p.c., the figure shown in Statement XXX. Thus, if the factors contributing to the legitimate birth rate had remained unaltered, the increase in the proportion of illegitimate births to legitimate births during the decade would have resulted in an increase of 1·91 p.c. in the crude birth rate of 1931-32 as compared with the crude birth rate of 1921-22.

The weak point in the analysis is, of course, that factors C and D can be computed by two methods, each equally legitimate. Examination of the statement, however, for the Registration Area and for each province composing it, shows that in all cases the results of the two methods are reasonably close and in some almost identical. In combining these two factors, it may be observed that either the results of the two first methods or the results of the two second methods must be used since these have been selected in such a way that they complement each other.

If, now, we take the percentages for the Registration Area which represent the single effect of each factor and multiply these percentages together, we should expect to obtain as a result the percentage which the crude birth rate of 1931-32 forms of the crude birth rate of 1921-22. The products are shown in the last column. If we take the Registration Area, the product of 101·19, 96·07, 94·48, 85·11 and 101·91 equals 79·7 p.c. The difference between this and the actual proportion, 79·8 p.c., which the crude birth rate of 1931-32 formed of the crude birth rate of 1921-22, is negligible due merely to the inexactitude of the decimals or such slight factors as "not stated" ages. It will be observed that in obtaining this product we could have taken, instead of 94·48 times 85·11, the alternative 94·55 times 85·04.

This analysis shows the important part which the decline of fertility within marriage played in the reduction of the birth rate. Two of the factors, the change in the proportion of women of child-bearing ages and the change in the proportion of total to legitimate births, would by themselves actually have accounted for a slight increase. The reduced proportion of married women to all women within the child-bearing ages would in itself have accounted for a reduction of about 4 p.c. in the birth rate. The more unfavourable distribution of married women in the child-bearing ages in the later census would have accounted for a reduction of about 5·5 p.c. but the decline in specific fertility without the aid of any other factor would have brought about a reduction of about 15 p.c. out of a total reduction of about 20 p.c.

Directing attention to the individual provinces, this decline in specific fertility would have accounted for a reduction of about 10 p.c. in the birth rate of Prince Edward Island, about 6 p.c. in Nova Scotia, over 6 p.c. in New Brunswick, about 18 p.c. in Ontario, about 21 p.c. in Manitoba, about 11·5 p.c. in Saskatchewan, about 8 p.c. in Alberta, and about 16 p.c. in British Columbia.

The change in the proportion of women of child-bearing ages to the total population worked unfavourably for the four eastern provinces and favourably for the four western. Prince Edward Island suffered the most, with a decline which alone would have effected a reduction of about 4 p.c. in the birth rate. On the other hand, from this cause acting alone, both Manitoba and Saskatchewan would have gained over 5 p.c. in the birth rate.

The proportion of married women to all women of child-bearing ages was more favourable in 1931 in only Prince Edward Island and Nova Scotia and the change in the latter province was trivial. It was most unfavourable in Saskatchewan and Manitoba in both of which it alone would have accounted for a reduction of more than 10 p.c. in the birth rate.

The change in the age distribution of married women within child-bearing ages was unfavourable throughout all provinces, but mostly so in Manitoba and Saskatchewan, where its effect would have accounted for a decline of 8 to 9 p.c.

In brief, *this analysis indicated that of all the factors which contributed to a decline in the crude birth rate of the Registration Area between the years 1921-22 and 1931-32, the change in the age distribution of married women of child-bearing ages was unfavourable throughout all provinces, but the major operating cause in every province was the decline in the specific fertility rates of married women.*

CHAPTER III

ORDER OF BIRTH

INTRODUCTORY AND EXPLANATORY

In Chapter II most of the analysis, especially that which concerned trends, referred to the Registration Area of 1921. Chapter III, on the other hand, refers mainly to all Canada except Yukon and Northwest Territories. This is because the entire nine provinces were in the National System of Registration by the time the order of birth was first tabulated.

Commencing with the year 1927, regular tabulations of the order of birth of children have been made annually. Stillbirths are included with live births in these tabulations which apply only to legitimate children.

The questions on the birth certificate on which the tabulations are based are as follows:—

Children of this mother (including the present birth)—

(a) Number born alive;

(b) Number now living;

(c) Number stillborn (born dead after twenty-eight weeks' pregnancy).

Where a twin birth occurs, both children are tabulated as of the order of birth of the later twin. It will be noted that this follows from the form of the questions. However, as children who are twins form, on the average, only about 1 in 43 of the total number of children born, this fact has little significance. The application of the same rule for triplets is, of course, altogether without significance owing to their very small number.

Though only available from the year 1927, the tabulations of order of birth afford a useful indication of the general trend in size of family and have, also, a special value in relation to the effect of the economic depression of 1930 and following years on the birth rate of Canada. We will consider this special value first.

As a background to analysis of births by order of birth in relation to the part of the population responsible for these births, Statement XXXI and Chart 8 show (a) the proportion of married women to all women 15-49 and (b) the proportion of women at the same age groups who were represented in the legitimate births of 1931.

XXXI.—PERCENTAGES OF ALL WOMEN 15-49 YEARS OF AGE WHO WERE (A) MARRIED, (B) REPRESENTED BY THE LEGITIMATE BIRTHS, BY QUINQUENNIAL AGE GROUPS, CANADA, 1931

Age Group	P.C. Married of Women in Age Group	P.C. of Women in Age Group Represented by Legitimate Births	Age Group	P.C. Married of Women in Age Group	P.C. of Women in Age Group Represented by Legitimate Births
15-19	5·04	2·51	35-39	82·66	10·55
20-24	36·51	13·39	40-44	82·77	4·56
25-29	66·65	17·62	45-49	81·43	0·56
30-34	79·25	14·77			

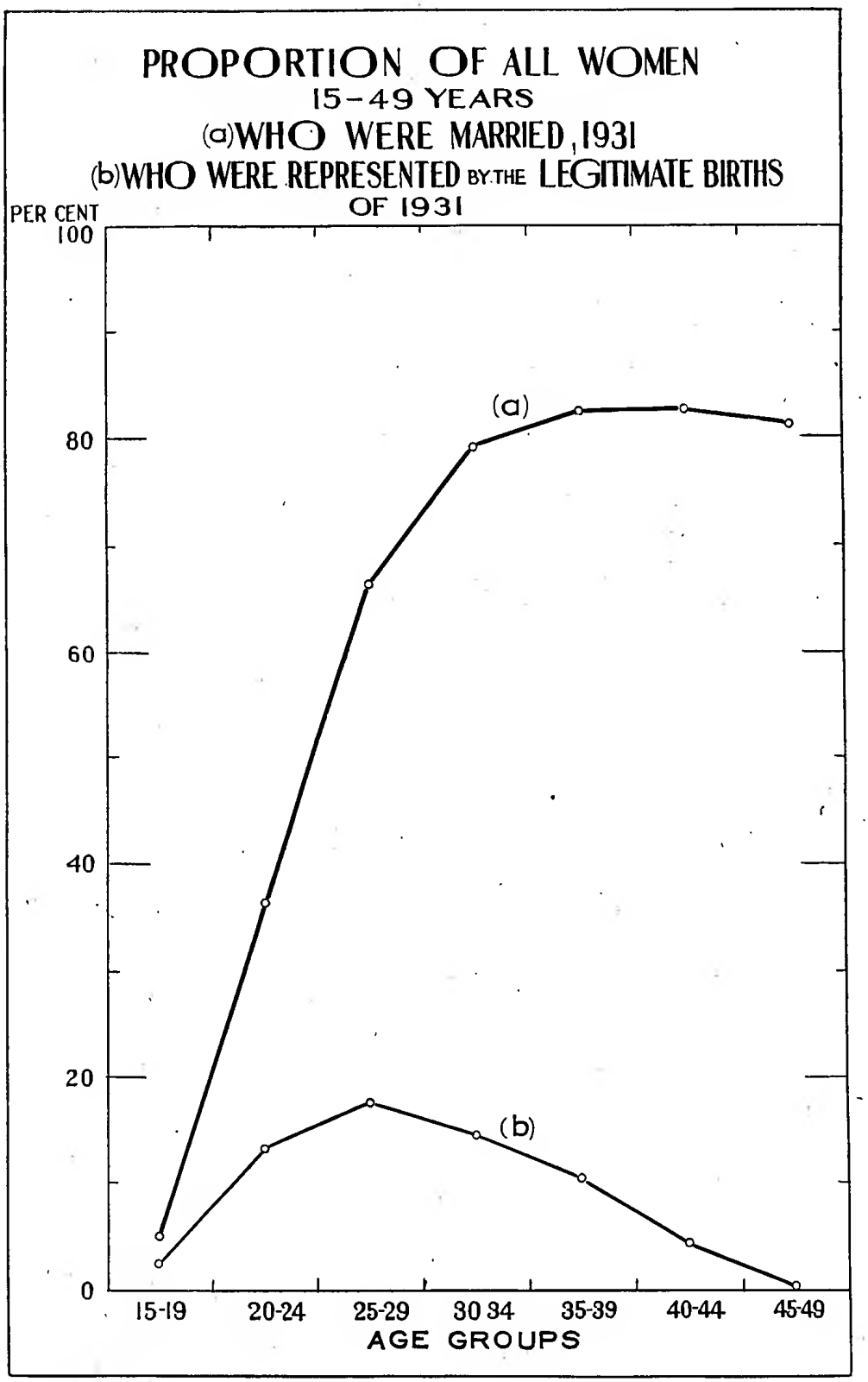

PROPORTION OF ALL WOMEN
15-49 YEARS
(a) WHO WERE MARRIED, 1931
(b) WHO WERE REPRESENTED BY THE LEGITIMATE BIRTHS OF 1931
PER CENT
100
80
60
40
20
0
(a)
(b)
15-19
20-24
25-29
30-34
35-39
40-44
45-49
AGE GROUPS

Chart 8

Births during the Period of Observation of Order of Birth.—Statement XXXII gives the order of birth of legitimate children born in Canada in each year over the period 1927-36.

XXXII.—NUMERICAL DISTRIBUTION OF LEGITIMATE CHILDREN[1] ACCORDING TO ORDER OF BIRTH, CANADA, 1927-1936

Order of Birth of Child	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
All orders	234,507	236,722	235,065	242,710	239,294	234,097	220,914	219,331	219,208	217,755
1st child	49,612	52,107	54,372	57,736	55,486	52,067	48,396	49,165	52,951	55,386
2nd "	40,927	41,847	42,965	45,271	45,710	45,053	42,274	41,294	41,027	41,365
3rd "	32,694	32,649	32,380	33,157	33,233	33,037	32,006	31,429	30,544	29,139
4th "	26,135	25,302	24,595	24,889	24,905	24,559	23,600	23,339	23,111	22,120
5th "	20,898	20,417	19,122	19,097	18,873	18,597	17,690	17,451	17,185	16,766
6th "	15,951	16,093	15,351	15,367	14,530	14,354	13,799	13,551	13,180	12,756
7th "	12,316	12,407	12,031	12,161	11,930	11,606	10,703	10,536	10,254	10,112
8th "	9,721	9,678	9,200	9,442	9,457	9,370	8,593	8,436	8,122	7,816
9th "	7,460	7,379	6,945	7,243	7,099	7,312	6,710	6,816	6,132	6,065
10th "	5,760	5,682	5,496	5,536	5,525	5,523	5,323	5,327	4,941	4,813
11th "	4,188	4,132	3,966	4,001	3,939	3,984	3,846	3,794	3,803	3,628
12th "	2,994	3,191	2,841	2,944	3,022	2,971	2,759	2,763	2,724	2,710
13th "	2,058	2,075	2,050	2,085	1,978	2,054	1,936	1,928	1,868	1,836
14th "	1,358	1,291	1,291	1,381	1,356	1,385	1,193	1,279	1,224	1,222
15th "	895	864	870	810	834	868	803	843	789	771
16th "	534	505	515	518	483	480	481	481	455	455
17th "	329	312	282	303	267	304	274	248	296	275
18th "	175	201	168	162	172	143	160	165	144	129
19th "	87	96	104	84	82	92	65	78	77	82
20th and over	101	119	85	102	100	96	98	106	92	78
Not stated	314	375	436	421	313	242	205	302	289	231

[1] Including stillbirths.

It will be observed from the absolute figures that the total number of legitimate births (including stillbirths) varied little between the years 1927 and 1929. The year 1930 showed a substantial increase in the number amounting to more than 7,500. With 1931 a decline commenced which lasted till 1936, though from 1933 the differences were small. The total number of legitimate births (including stillbirths) in 1930, the highest year in our order of birth series, was 242,710, while for 1936 it had fallen to 217,755, a decline in all of about 25,000. On account of the comparatively small number of illegitimate live births (which are excluded) and of legitimate stillbirths (which are included) this decline is fairly representative of the decline in the total number of live births, which amounted to about 23,000 between 1930 and 1936.

A study of Statement XXXII, Table 9, Part III, page 248, and the material to follow will help the reader to understand the incidence of the various orders of birth upon these increases and declines.

TREND IN ORDER OF BIRTH DURING THE PERIOD

Relation of Increase or Decrease in Marriages to Order of Birth.—A brief analysis of the table of order of birth will be of great assistance in establishing the effect of the decline in marriages during the depression on the number of births and the influence of other factors which, while possibly related to the depression, were not due to the decline in the number of marriages.

Statement XXXIII shows separately the increase or decline in first births, second births and higher orders of birth between 1927 and 1928 and each further pair of successive years ending with 1936. The statement also shows, on the same line as the increase or decrease in the number of first births, the increase or decrease in the number of marriages for the twelve-month period

for which new marriages may be assumed to have most directly affected the number of first births. For each year of birth this twelve-month period extends from April of the preceding year to March of the year under review.

XXXIII.—INCREASE OR DECREASE IN MARRIAGES, BY YEAR OF MARRIAGE, AND CORRESPONDING INCREASE OR DECREASE IN BIRTHS, BY YEAR AND ORDER OF BIRTH, CANADA, BY SINGLE YEARS, APRIL, 1927—MARCH, 1936

Year of Marriage	Marriages	Year of Birth	Total Births	First Births	Births of Other Orders		
					Total	Second Births	Higher Orders
April 1927—March 1928	+2,532	1928	+ 2,215	+2,495	− 341	+ 920	−1,261
" 1928 " 1929	+4,087	1929	− 1,657	+2,265	−3,983	+1,118	−5,101
" 1929 " 1930	+3,717	1930	+ 7,645	+3,364	+4,296	+2,306	+1,990
" 1930 " 1931	−7,535	1931	− 3,416	−2,250	−1,058	+ 439	−1,497
" 1931 " 1932	−3,630	1932	− 5,197	−3,419	−1,707	− 657	−1,050
" 1932 " 1933	−4,649	1933	−13,183	−3,671	−9,475	−2,779	−6,696
" 1933 " 1934	+2,379	1934	− 1,583	+ 769	−2,449	− 980	−1,469
" 1934 " 1935	+9,403	1935	− 123	+3,786	−3,896	− 267	−3,629
" 1935 " 1936	+3,142	1936	− 1,453	+2,435	−3,830	+ 338	−4,168

Examining the first column of the statement, which gives the marriages of these successive twelve-month periods, it is observed that the first period which would most directly affect the first births of 1928, *i.e.*, April, 1927-March, 1928, showed an increase of 2,532. The next two twelve-month periods showed more substantial increases but were followed by three periods of decline, of which the first was considerably the greatest and which, by their joint action, produced a total decline from the peak number amounting to more than 15,000. The last three twelve-month periods show recovery in each case, the greatest occurring in the second period when the number of marriages increased by 9,403.

Turning now to the total births of the calendar years 1928-36, it is observed that only the first and third years show increases. The last three years, corresponding to marriage periods in which the changing number of marriages should have affected the first births favourably, all show declines in total births though none are large.

The most outstanding example in the statement of relationship between the change in the number of total births and the change in the number of marriages is for the year 1933, in which total births showed a decline of 13,183. The twelve months ending in March, 1933, showed a decline in marriages of 4,649, following on two preceding twelve-month periods with declines in marriages of 7,535 and 3,630, respectively.

The fourth column of the statement shows increases or decreases in the number of first births corresponding to increases or decreases in the number of marriages for the twelve-month period affecting most directly the first births of each calendar year. As might be expected, the proportion of the change in number of first births to the change in number of marriages is least when the movement in the latter changes direction and greatest when the movement in the number of marriages has been in the same direction for the maximum number of years, which in the statement never exceeds three.

Second births might be most directly affected by a change in the number of marriages for the twelve-month period preceding that which most directly affects the first births. The sixth column of the statement shows some such relationship for the years 1929-34 but the decline in second births continued into the year 1935 and a slight recovery was not apparent until 1936. As might have been expected, therefore, the second births reflect, more weakly than first births and with less exactitude, any increase or decrease in the number of marriages.

For higher orders of birth than the second the relationship is, of course, rather small and undetermined over such a small period of years. With the exception of the year 1930, every year of the period showed a decline in the number of births in higher orders than the second.

The statement demonstrates clearly that the decline in marriages during the depression and the consequent decline in the number of first births accounted for only a fraction of the decline in the total number of births. The failure of the Canadian birth rate to rise again with the increasing number of marriages year by year which commenced with 1933 is easily understood when the downward trend of orders of birth higher than the second is observed to have manifested itself almost without exception during the whole period 1928-36.

Statements XXXIV and XXXV, showing the number of females married in each age group and their average age for the years 1927-36 should be studied for further elucidation.

XXXIV.—NUMBER OF BRIDES 15-49 YEARS OF AGE, BY AGE GROUP, CANADA, 1927-1936

Age Group	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
15-49	67,961	72,707	75,722	70,054	65,140	61,088	62,441	71,591	75,376	79,407
15-19	15,746	16,968	17,403	15,906	15,327	14,570	14,265	15,294	15,265	15,503
20-24	29,705	32,075	33,934	31,249	29,104	27,372	27,978	32,405	34,218	35,714
25-29	12,888	13,714	14,425	13,527	12,294	11,439	12,525	15,165	16,455	17,988
30-34	4,706	4,958	4,931	4,711	4,156	3,818	3,947	4,805	5,353	5,780
35-39	2,511	2,550	2,530	2,360	2,102	1,953	1,866	2,008	2,083	2,342
40-44	1,382	1,447	1,495	1,379	1,254	1,127	1,096	1,131	1,207	1,237
45-49	973	995	1,004	922	903	809	764	783	795	843

XXXV.—AVERAGE AGE OF BRIDES 15-49 YEARS OF AGE, BY AGE GROUP, CANADA, 1927-1936

Age Group	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
	years	years	years	years	years	years	years	years	years	years
15-49	23·8	23·8	23·7	23·8	23·7	23·6	23·6	23·7	23·8	23·9
15-19	18·0	18·0	18·0	18·0	18·0	18·0	18·0	18·1	18·1	18·0
20-24	21·8	21·8	21·8	21·8	21·8	21·8	21·8	21·9	21·9	21·9
25-29	26·6	26·6	26·6	26·6	26·6	26·6	26·6	26·6	26·6	26·6
30-34	31·6	31·7	31·6	31·6	31·6	31·6	31·6	31·6	31·6	31·6
35-39	36·8	36·8	36·8	36·8	36·8	36·8	36·8	36·7	36·7	36·7
40-44	41·7	41·8	41·8	41·8	41·8	41·8	41·8	41·8	41·8	41·7
45-49	46·8	46·8	46·8	46·7	46·8	46·8	46·8	46·9	46·8	46·9

DIFFERENTIAL TREND IN ORDER OF BIRTH

First Births.—Statement XXXVI is based on the absolute figures of Statement XXXI and shows the percentage distribution of legitimate children according to order of birth over the period 1927-36.

XXXVI.—PERCENTAGE DISTRIBUTION OF LEGITIMATE CHILDREN ACCORDING TO ORDER OF BIRTH, NOT ADJUSTED FOR DIFFERENCES IN AGE DISTRIBUTION OF MOTHERS, CANADA, 1927-1936

Order of Birth of Child	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
All orders	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
1st child	21·18	22·05	23·17	23·83	23·22	22·26	21·93	22·45	24·19	25·46
2nd "	17·48	17·71	18·31	18·68	19·13	19·27	19·15	18·85	18·74	19·02
3rd "	13·96	13·81	13·80	13·68	13·91	14·13	14·50	14·35	13·95	13·40
4th "	11·16	10·71	10·48	10·27	10·42	10·50	10·69	10·66	10·56	10·17
5th "	8·92	8·64	8·15	7·88	7·90	7·95	8·02	7·97	7·85	7·71
6th "	6·81	6·81	6·54	6·34	6·08	6·14	6·25	6·19	6·02	5·86
7th "	5·26	5·25	5·13	5·02	4·99	4·96	4·85	4·81	4·68	4·65
8th "	4·15	4·09	3·92	3·90	96	4·01	3·89	3·85	3·71	3·59
9th "	3·19	3·12	2·96	2·99	2·97	3·13	3·04	3·11	2·80	2·79
10th "	2·46	2·40	2·34	2·28	2·31	2·36	2·41	2·43	2·26	2·21
11th "	1·79	1·75	1·69	1·65	1·65	1·70	1·74	1·73	1·74	1·67
12th "	1·28	1·35	1·21	1·22	1·26	1·27	1·25	1·26	1·24	1·25
13th "	0·88	0·88	0·87	0·86	0·83	0·88	0·88	0·88	0·85	0·84
14th "	0·58	0·55	0·55	0·57	0·57	0·59	0·54	0·58	0·56	0·56
15th "	0·38	0·37	0·37	0·33	0·35	0·37	0·36	0·38	0·36	0·35
10th and over	0·52	0·52	0·49	0·48	0·46	0·48	0·49	0·49	0·49	0·47

It will be observed that the proportion of first births to all births was inereasing up to 1930 and that, with the effect of the deeline in marriages on first births whieh has just been eonsidered above, this inerease was arrested and during the next three years first births show a declining proportion of the total number. Commencing with the year 1934 and corresponding to an inerease in the number of marriages during the twelve-month period, April, 1933-March, 1934, the proportion of first births again starts to mount and this upward movement continues throughout the remaining years. The net effect of these ehanges was that the proportion of first births increased from 21·18 p.c. of the total in 1927 to 25·46 p.e. in 1936.

Second Births.—The proportion of second births also shows an upward trend throughout the period, interrupted only during the three years 1933-35. This interruption does not, of course, correspond regularly to the movement of second births as shown in Statement XXXIII because the proportion of second births is affected both by the number of first births and the births of a higher order than the second.

Third and Higher Orders.—The change in the proportion of third births during the period was smaller than in either of the other cases, but the general tendency was evidently towards a decline and this deeline was only interrupted in the three years during whieh the proportion of first births was decreasing. The same remark applies to the proportion of fourth births. Here the net decline during the period was greater than in the case of third births and the extent of the interruption during the years 1931-33 was less. With fifth births the interruption is still smaller and the net decline over the whole period greater than for fourth births. The trends discussed in the last three paragraphs, after being adjusted for the influence of age of mother, are shown in Chart 10, page 272.

Summary.—The percentage of decline between 1927 and 1936 in the proportion of each order of birth to the total is shown in Statement XXXVII.

XXXVII.—PERCENTAGE DISTRIBUTION OF LEGITIMATE CHILDREN ACCORDING TO ORDER OF BIRTH, CANADA, 1936, NOT ADJUSTED FOR DIFFERENCES IN AGE DISTRIBUTION OF MOTHERS, EXPRESSED AS AN INDEX OF THAT OF 1927

Order of Birth of Child	Index	Order of Birth of Child	Index
1st child	120·2	9th child	87·5
2nd "	108·8	10th "	89·8
3rd "	96·0	11th "	93·3
4th "	91·1	12th "	97·7
5th "	86·4	13th "	95·5
6th "	86·0	14th "	96·5
7th "	88·4	15th "	92·1
8th "	86·5	16th and over	90·4

The upward trend of the proportion of first and second births over so short a period as shown in Statement XXXVI has much more significance from the fact that the order of birth reflects not merely the tendency existing during the period under review but during the whole married life of each woman whose latest child helps to form the pieture presented by this statement. It is evident also that the decline in marriages during the depression reduced to an appreciable degree the extent of the upward movement between the first and last year.

INFLUENCE OF AGE OF MOTHER

Importance of Adjustment.—The absolute figures of Statement XXXII and the proportionate figures of Statement XXXVI which were based upon them, take no account of any changes in the age distribution of mothers during the period under review. The tabulations from which these figures are derived, and which have been published in the annual reports of Vital Statistics, show order of birth by age of mother in five-year age groups and this detailed information enables us to make an adjustment for age.

Method of Adjustment.—The method of adjustment for differences in age distribution was to take, for a given year and a given age group, the distribution into first births, second births, etc., and to multiply these individual orders of birth for the given age group by a factor whose numerator was the percentage which the given age group formed of all married mothers for the standard period and whose denominator was the percentage which the given age group formed of all married mothers in the year for which adjustment was being made.

The standard age distribution adopted for this purpose was the average of the three years 1930-32 as shown in Statement XXXVIII. This period of three years practically centres on the date of the Census of 1931 and the Census population of Canada in 1931 has been adopted as the standard in certain other statements.

XXXVIII.—PERCENTAGE DISTRIBUTION OF MARRIED MOTHERS, BY AGE GROUP, CANADA, AVERAGED FOR 1930-1932

Age Group of Mother	Average P.C. 1930-32	Age Group of Mother	Average P.C. 1930-32
Under 20 years	5·38	35-39 years	14·59
20-24 "	24·94	40-44 "	5·82
25-29 "	27·63	45-49 "	0·63
30-34 "	21·00		

Age Data Used in Adjustment.—The age distribution of married mothers of live and stillborn children on which the adjustment of the figures of Statement XXXII were based are shown in Statement XXXIX.

XXXIX.—PERCENTAGE DISTRIBUTION OF MARRIED MOTHERS, BY AGE GROUP, CANADA, 1927-1936

Year	Age of Mother							
	All Ages	Under 20	20-24	25-29	30-34	35-39	40-44	45 and over
1927	100·00	4·91	23·57	27·16	21·86	15·64	6·17	0·68
1928	100·00	5·14	24·05	27·07	21·62	15·32	6·14	0·66
1929	100·00	5·34	24·80	27·47	21·09	14·75	5·94	0·61
1930	100·00	5·39	25·13	27·28	21·03	14·67	5·89	0·62
1931	100·00	5·40	25·04	27·71	21·02	14·52	5·69	0·61
1932	100·00	5·34	24·65	27·92	20·95	14·59	5·89	0·66
1933	100·00	5·25	24·45	28·21	21·11	14·61	5·71	0·67
1934	100·00	5·13	24·29	28·29	21·48	14·36	5·83	0·63
1935	100·00	5·20	24·71	28·49	20·98	14·31	5·62	0·66
1936	100·00	5·14	25·08	28·49	21·08	14·05	5·58	0·59

It will be noted that the proportion of married mothers under 20 years moved upward from 4·91 in 1927 to 5·40 in 1931, that there was a retrogression in the proportion to 1934 when the figure was 5·13 p.c. and that in 1936 it was almost identical with this, *i.e.*, 5·14.

The next age group, 20-24 years, commenced with 23·57 p.c. in 1927 and, increasing each year, reached 25·13 p.c. in 1930. The retrogression which followed lowered it to 24·29 p.c. in 1934 but a subsequent recovery made the figures for the final year, 1936, 25·08 p.c. The movement of the age group 25-29 years was more irregular, yet, in this group also, the final years were higher than the initial ones, 1935 and 1936 showing 28·49 p.c. of all married mothers in this group whereas 1927 and 1928 had 27·16 p.c. and 27·07 p.c., respectively.

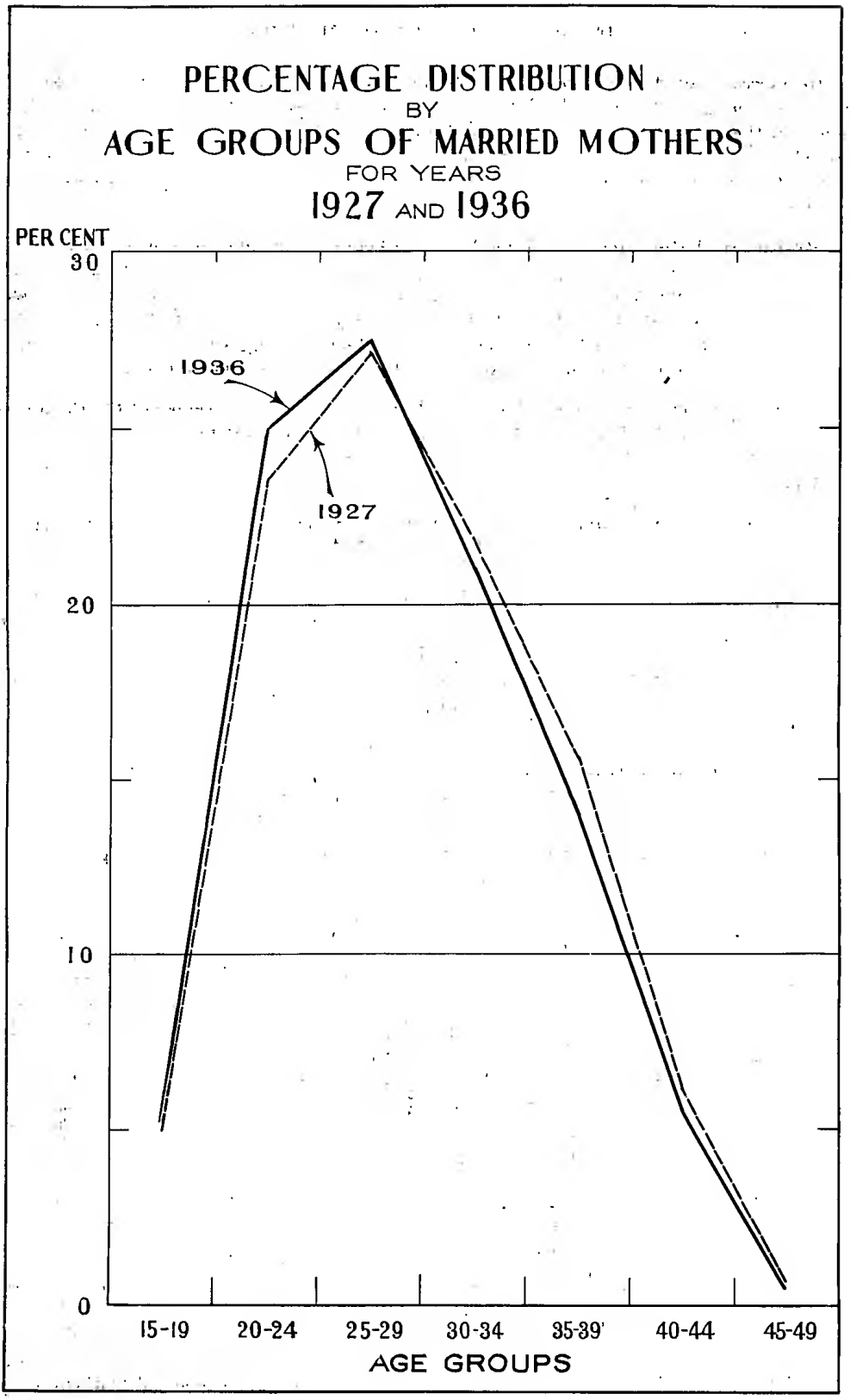

PERCENTAGE DISTRIBUTION
BY
AGE GROUPS OF MARRIED MOTHERS
FOR YEARS
1927 AND 1936
PER CENT
30
20
10
0
1936
1927
15-19
20-24
25-29
30-34
35-39
40-44
45-49
AGE GROUPS

Chart 9

In all of the age groups over 30 years of age the movement was definitely downward, the decline being interrupted in those years where age groups under 30 years showed a temporary downward trend. The extent of the decline between the years about the beginning of the period and those about the end was generally greater for the higher age groups. Chart 9 gives a graphic description of the change in age distribution over the period.

Order of Birth Adjusted for Age of Mother.—Statement XL shows the order of birth of legitimate children after adjustment was made for differences in age distribution of mothers.

XL.—NUMERICAL DISTRIBUTION OF LEGITIMATE CHILDREN ACCORDING TO ORDER OF BIRTH, ADJUSTED FOR DIFFERENCES IN AGE DISTRIBUTION OF MOTHERS, CANADA, 1927-1936

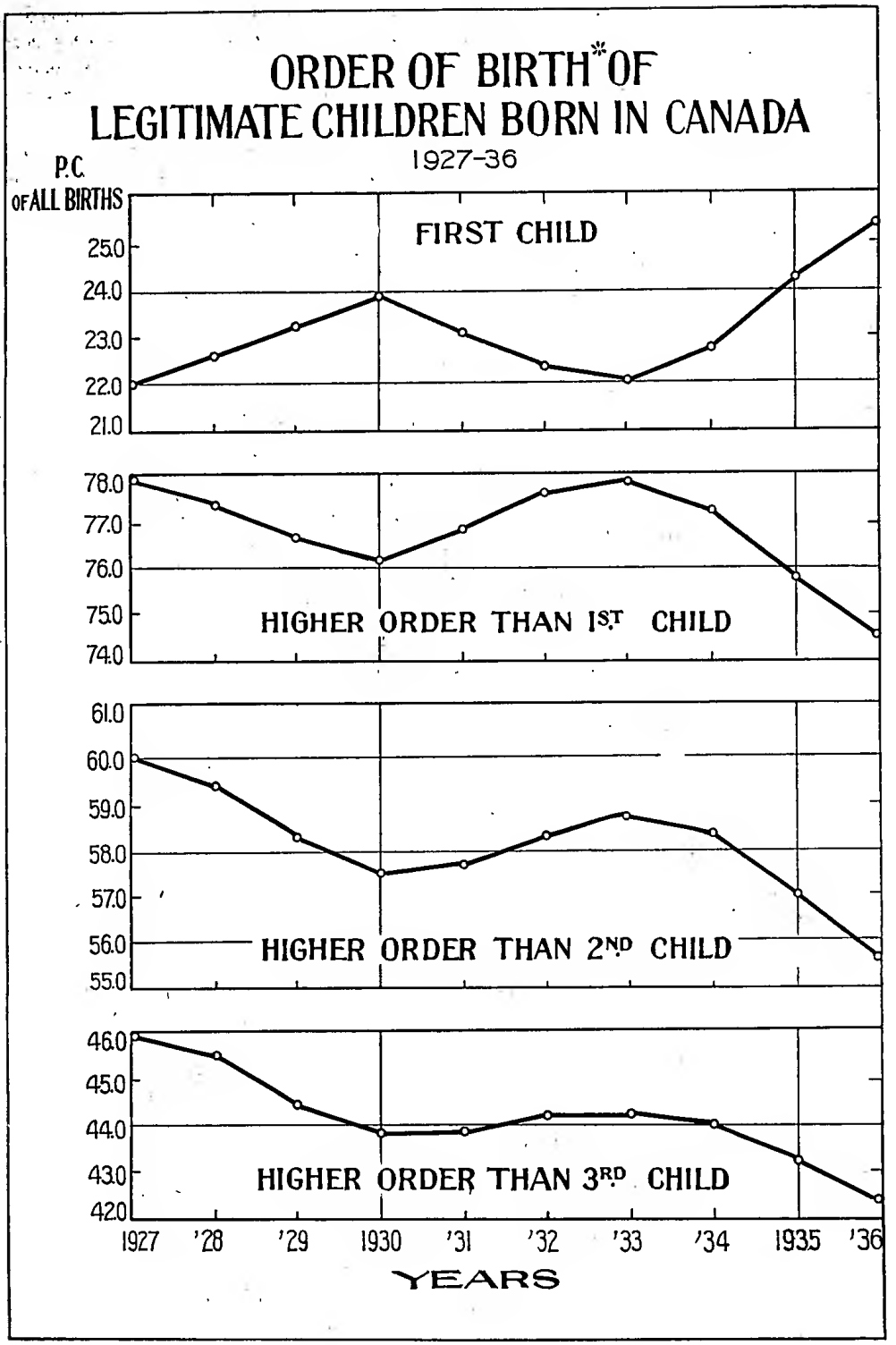
Order of Birth of Child	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
All orders	233,747	235,909	234,338	242,062	238,875	233,741	220,585	218,896	218,887	217,402
1st child	51,510	53,308	54,532	57,631	55,289	52,262	48,756	49,762	53,077	55,223
2nd "	41,827	42,467	43,060	45,247	45,584	45,121	42,338	41,384	40,882	41,025
3rd "	32,869	32,803	32,395	33,172	33,170	33,020	31,910	31,304	30,366	28,889
4th "	25,958	25,214	24,561	24,922	24,875	24,504	23,457	23,132	22,954	21,960
5th "	20,522	20,183	19,067	19,125	18,869	18,533	17,554	17,249	17,083	16,694
6th "	15,496	15,791	15,281	15,373	14,548	14,303	13,703	13,402	13,149	12,760
7th "	11,844	12,076	11,965	12,150	11,957	11,575	10,647	10,439	10,287	10,188
8th "	9,266	9,348	9,126	9,413	9,495	9,344	8,564	8,389	8,182	7,930
9th "	7,079	7,092	6,883	7,211	7,138	7,292	6,699	6,798	6,202	6,196
10th "	5,436	5,439	5,441	5,506	5,566	5,501	5,323	5,328	5,014	4,943
11th "	3,931	3,949	3,921	3,978	3,975	3,964	3,847	3,801	3,871	3,743
12th "	2,813	3,043	2,808	2,925	3,056	2,952	2,765	2,774	2,775	2,806
13th "	1,931	1,976	2,025	2,072	2,003	2,039	1,941	1,935	1,906	1,906
14th "	1,272	1,228	1,274	1,372	1,377	1,372	1,196	1,283	1,249	1,271
15th "	839	821	860	804	848	859	806	346	806	803
16th "	500	480	508	515	492	474	483	482	464	475
17th "	308	297	278	301	272	300	275	248	302	287
18th "	163	199	166	161	175	141	159	165	147	135
19th "	82	91	103	83	84	91	65	78	78	86
20th and over	95	113	84	101	102	94	97	106	93	82

The percentage distribution of order of birth after adjustment is shown in Statement XLI. As compared with Statement XXXVI, the figures of Statement XLI reduced the tendency which has been noted of showing in the later years higher proportions of the lower orders of birth and lower proportions of the higher orders. However, the tendency is still apparent, modified, of course, by the reduction in first and second births which resulted from the dedline in marriages during the depression years.

XLI.—PERCENTAGE DISTRIBUTION OF LEGITIMATE CHILDREN ACCORDING TO ORDER OF BIRTH ADJUSTED FOR DIFFERENCES IN AGE DISTRIBUTION OF MOTHERS, CANADA, 1927-1936

Order of Birth of Child	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
All orders	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
1st child	22·04	22·60	23·27	23·81	23·15	22·36	22·10	22·73	24·25	25·40
2nd "	17·89	18·00	18·38	18·69	19·08	19·30	19·19	18·91	18·68	18·87
3rd "	14·06	13·90	13·82	13·70	13·89	14·13	14·47	14·30	13·87	13·29
4th "	11·10	10·69	10·48	10·30	10·41	10·48	10·63	10·57	10·49	10·10
5th "	8·78	8·56	8·14	7·90	7·90	7·93	7·96	7·88	7·80	7·08
6th "	6·63	6·69	6·52	6·35	6·09	6·12	6·21	0·12	6·01	5·87
7th "	5·07	5·12	5·11	5·02	5·01	4·95	4·83	4·77	4·70	4·69
8th "	3·96	3·96	3·89	3·89	3·97	4·00	3·88	3·83	3·74	3·65
9th "	3·03	3·01	2·94	2·98	2·99	3·12	3·04	3·11	2·83	2·85
10th "	2·33	2·31	2·32	2·27	2·33	2·35	2·41	2·43	2·29	2·27
11th "	1·68	1·67	1·67	1·64	1·66	1·70	1·74	1·74	1·77	1·72
12th "	1·20	1·29	1·20	1·21	1·28	1·26	1·25	1·27	1·27	1·29
13th "	0·83	0·84	0·86	0·86	0·84	0·87	0·88	0·88	0·87	0·88
14th "	0·54	0·52	0·54	0·57	0·58	0·59	0·54	0·59	0·57	0·58
15th "	0·36	0·35	0·37	0·33	0·36	0·37	0·37	0·39	0·37	0·37
16th and over	0·49	0·50	0·49	0·48	0·47	0·47	0·49	0·49	0·50	0·49

The effect which adjustment for differences in age distribution of mothers over the period 1927-36 had on figures shown in Statement XLI indicates that, in general, the later years showed larger proportions of younger mothers who thus had completed less of their total period of fertility at the time when the birth of a child brought them into the picture presented by these statements (see, also, Chart 10).



*Adjusted for differences in age distribution of mothers.

Chart 10

TREND IN ACCUMULATED ORDERS OF BIRTH

Total at and over Each Order.—Statement XLII is based on the figures of Statement XLI and shows, after adjustment for age, the proportion of mothers of each year having more than one child (including the present birth), more than two children, more than three, etc. The statement shows that the proportion of mothers having more than one child varied between 77·95 p.c. in 1927 and 74·60 p.c. in 1936, the proportion having more than two children between 60·06 p.c. in 1927 and 55·73 p.c. in 1936, having more than three children between 46·00 p.c. in 1927 and 42·44 p.c. in 1936, and having more than four children between 34·90 p.c. in 1927 and 32·34 p.c. in 1936. Thus, in the final year of the period, less than three-quarters of the mothers of the year were having a birth of higher order than the first and less than one-third were having a birth of higher order than the fourth.

XLII.—PERCENTAGES OF MARRIED MOTHERS HAVING MORE THAN A GIVEN NUMBER OF CHILDREN, ADJUSTED FOR DIFFERENCES IN AGE DISTRIBUTION OF MOTHERS, CANADA, 1927-1936

Number of Children Born	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
One child or more	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
More than 1 child	77·95	77·41	76·73	76·19	76·86	77·64	77·89	77·28	75·76	74·60
" " 2 children	60·06	59·41	58·35	57·50	57·78	58·34	58·70	58·37	57·08	55·73
" " 3 "	46·00	45·51	44·53	43·80	43·89	44·21	44·23	44·07	43·21	42·44
" " 4 "	34·90	34·82	34·05	33·50	33·48	33·73	33·60	33·50	32·72	32·34
" " 5 "	26·12	26·26	25·91	25·60	25·58	25·80	25·64	25·62	24·92	24·66
" " 6 "	19·49	19·57	19·39	19·25	19·49	19·68	19·43	19·50	18·91	18·79
" " 7 "	14·42	14·45	14·28	14·23	14·48	14·73	14·60	14·73	14·21	14·10
" " 8 "	10·46	10·49	10·39	10·34	10·51	10·73	10·72	10·90	10·47	10·45
" " 9 "	7·43	7·48	7·45	7·36	7·52	7·61	7·68	7·79	7·64	7·60
" " 10 "	5·10	5·17	5·13	5·09	5·19	5·26	5·27	5·36	5·35	5·33
" " 11 "	3·42	3·50	3·46	3·45	3·53	3·56	3·53	3·62	3·58	3·61
" " 12 "	2·22	2·21	2·26	2·24	2·25	2·30	2·28	2·35	2·31	2·32
" " 13 "	1·39	1·37	1·40	1·38	1·41	1·43	1·40	1·47	1·44	1·44
" " 14 "	0·85	0·85	0·86	0·81	0·83	0·84	0·86	0·88	0·87	0·86
" " 15 "	0·49	0·50	0·49	0·48	0·47	0·47	0·49	0·49	0·50	0·49

TREND IN AGE DISTRIBUTION OF MARRIED MOTHERS, REGISTRATION AREA, 1921-1936

The fact observed in Statement XXXIX regarding the age distribution of married mothers suggests such a statement over the whole period 1921-36. This can, however, be given only for the eight provinces composing the Registration Area and which entered the National System at its inception. The proportions in question are shown in Statement XLIII. As this statement was not constructed for the same purpose as Statement XXXIX, *viz.*, to apply to an order of birth statement for purposes of adjustment, it has been confined to mothers of live-born children, but this fact has little importance because of the small number of stillbirths as compared with live births.

XLIII.—PERCENTAGE DISTRIBUTION OF MARRIED MOTHERS[1], BY AGE GROUP, REGISTRATION AREA, 1921-1936

Year	Age of Mother							
	All Ages	Under 20	20-24	25-29	30-34	35-39	40-44	45 and over
1921	100·00	5·55	24·79	27·79	21·57	14·64	5·07	0·59
1922	100·00	5·63	24·21	27·89	21·69	14·71	5·35	0·52
1923	100·00	5·25	23·92	27·90	21·96	15·01	5·41	0·55
1924	100·00	5·41	23·97	27·63	22·05	14·84	5·57	0·53
1925	100·00	5·67	23·77	27·52	21·71	15·13	5·64	0·57
1926	100·00	5·57	24·04	27·15	21·96	14·96	5·74	0·58
1927	100·00	5·85	24·68	26·77	21·63	14·88	5·57	0·62
1928	100·00	6·08	25·25	26·61	21·31	14·60	5·59	0·57
1929	100·00	6·44	26·23	26·94	20·56	13·96	5·32	0·55
1930	100·00	6·47	26·59	26·92	20·36	13·80	5·35	0·51
1931	100·00	6·58	26·83	27·18	20·16	13·63	5·09	0·54
1932	100·00	6·61	26·66	27·38	19·92	13·60	5·26	0·57
1933	100·00	6·58	26·79	27·65	20·01	13·34	5·06	0·56
1934	100·00	6·51	27·00	27·82	20·15	12·87	5·08	0·56
1935	100·00	6·53	27·55	28·09	19·59	12·80	4·88	0·55
1936	100·00	6·43	27·87	28·21	19·67	12·57	4·79	0·47

[1] Live births only.

It will be observed that the age groups under 30 show higher proportions of mothers at the end of the period than at the beginning, while the contrary is true for the age groups over 30. The trend is not uninterrupted; there are certain irregularities. It is evident that the decline in marriages during the depression would reduce the proportion of first births, thereby affecting unfavourably the proportion of younger mothers, but the effect of other factors prevents this from standing out as clearly as it might.

In general, the most pronounced trend in the ages of married mothers is observed in the age groups 20-24 and 35-39. The former group provided 24·79 p.c. of married mothers in 1921 and, with only one slight interruption in 1924, declined to a low of 23·77 p.c. in 1925. This decline is presumably related to a downward trend in the number of marriages which continued uninterruptedly over the period 1921-25, with the exception of the year 1923. Commencing with 1926, the proportion moved upward year by year to 1931. The year 1932 showed a slight retrogression but the upward movement recommenced in 1933 and continued to 1936, the last year shown in the statement. Between the first and last year there was an increase in the proportion of more than 12 p.c. The age group 35-39 showed in the first year, 1921, a proportion of 14·64 p.c. of all married mothers. This proportion increased year by year up to 1925, with the exception of 1924, which showed a set-back from the previous year. Commencing with 1926, a decline set in which continued without interruption during the remainder of the period under review. Between the first and last year, this age group showed a reduction of 14 p.c. in its proportion of all married mothers. It will be noted that the upward movement between 1921-25, even to the extent of its one interruption, corresponded to the downward movement of the age group 20-24 but that it differed from that age group in showing no interruption to the trend between 1925 and 1936. It will easily be understood that the decline in marriages during the depression, through its influence on the proportion of first births, would produce a more direct result on the age group 20-24 than on the age group 35-39 as its influence on the older age groups would be dispersed.

The net movement of the other age groups over the period is proportionately less and, as might be expected the trend shows more irregularities.

TYPE OF MOTHER AS INDICATED BY ORDER OF BIRTH

Average Age of Married Mothers in the Different Orders of Birth.—Statement XLIV shows the average age of married mothers as they fall in the different orders of birth for the years 1927-36.

XLIV.—AVERAGE AGE OF MARRIED MOTHERS ACCORDING TO ORDER OF BIRTH OF CHILDREN, CANADA, 1927-1936

Order of Birth	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
	years	years	years	years	years	years	years	years	years	years
1st child	29·45	29·30	29·30	29·30	29·30	29·30	29·30	29·40	29·45	29·55
2nd "	31·49	31·45	31·35	31·35	31·35	31·25	31·35	31·45	31·55	31·55
3rd "	33·40	33·40	33·35	33·35	33·20	33·15	33·15	33·15	33·25	33·40
4th "	34·90	34·95	34·90	34·95	34·85	34·80	34·80	34·80	34·80	34·85
5th "	36·30	36·30	36·40	36·40	36·35	36·40	36·25	36·15	36·20	36·20
6th "	37·55	37·55	37·60	37·70	37·65	37·70	37·60	37·65	37·60	37·50
7th "	38·80	38·80	38·75	38·85	38·85	38·90	38·95	38·85	39·00	38·90
8th "	40·05	40·00	39·95	40·00	40·00	40·00	40·10	40·00	40·15	40·10
9th "	41·00	41·15	41·08	41·25	41·10	41·10	41·10	41·10	41·15	41·25
10th "	42·20	42·20	42·13	42·20	42·15	42·20	42·15	42·15	42·30	42·25
11th "	43·15	43·15	43·00	43·05	43·05	43·30	43·15	43·00	43·15	43·20
12th "	43·95	43·85	43·90	43·90	43·95	44·00	44·05	43·95	44·05	43·90
13th "	44·55	44·80	44·50	44·75	44·45	44·65	44·65	44·65	44·70	44·65
14th "	45·35	45·15	45·25	45·30	45·40	45·40	45·40	45·40	45·45	45·40
15th "	45·90	45·80	45·75	45·75	45·90	45·85	45·95	45·70	45·83	45·80
16th and over	46·70	46·60	46·35	46·55	46·65	46·65	46·75	46·80	46·85	46·90

We observe an exceptional degree of constancy over the period in the average age of mother for any given order of birth. Consequently, the average age for each order over the ten-year period would seem to be significant. These figures are shown in Statement XLV.

XLV.—AVERAGE AGE OF MARRIED MOTHERS, BY ORDER OF BIRTH, CANADA, 1927-1936

Order of Birth	Average Age of Mother, 1927-36	Order of Birth	Average Age of Mother, 1927-36
1st child	29·37	9th child	41·13
2nd "	31·41	10th "	42·19
3rd "	33·28	11th "	43·12
4th "	34·86	12th "	43·95
5th "	36·30	13th "	44·64
6th "	37·61	14th "	45·35
7th "	38·87	15th "	45·82
8th "	40·04	16th and over	46·68

Beginning with an average age of 29·37 for the first order, 31·41 (or 2·04 years older) for the second order and so on, we observe that there is a progressive lessening of the interval between births as we ascend the scale of orders. This fact is illustrated in Chart 11 which shows the age at each order.

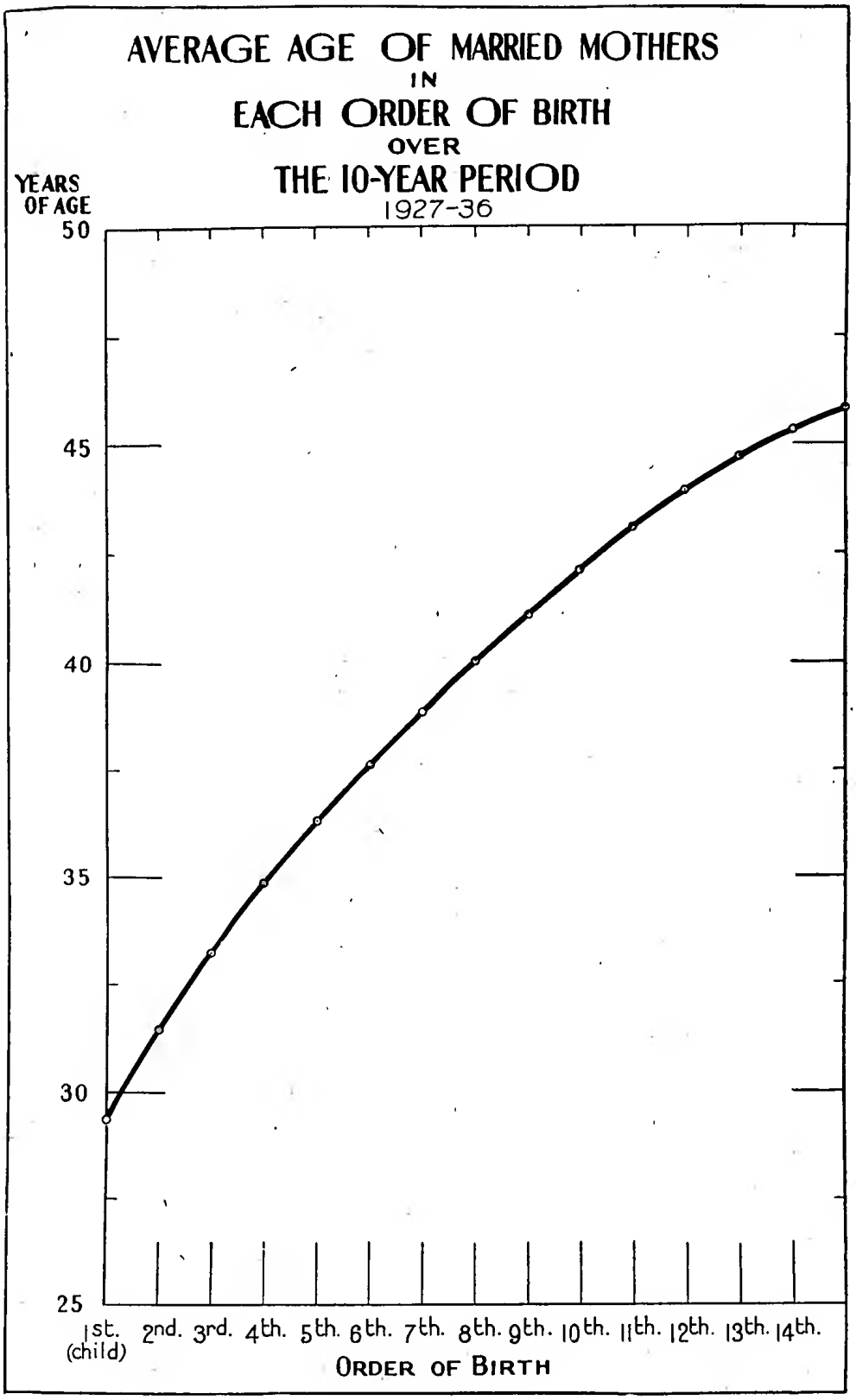

AVERAGE AGE OF MARRIED MOTHERS
IN
EACH ORDER OF BIRTH
OVER
THE 10-YEAR PERIOD
1927-36
YEARS OF AGE
50
45
40
35
30
25
1st. (child)
2nd.
3rd.
4th.
5th.
6th.
7th.
8th.
9th.
10th.
11th.
12th.
13th.
14th.
ORDER OF BIRTH

Chart 11

This could happen in several ways, of course. Although the influence of twin and multiple births might be expected to be very influential, the number of such births is so small that this could hardly be a major cause of the decreasing interval of age for each order. The same may be said of the influence of stillbirths. One conclusion must be avoided, *viz.*, that in any one family the interval is decreasing with every additional child. There is no doubt that the lessening interval is a matter of the larger family having a smaller interval of time between births than the smaller family—in other words, the distinction is between different types of families, not between births in the same family. In whatever way we look at it, it has an important bearing upon fertility; for if the same interval obtained between each order as between the first and second, *viz.*, 2·04 years, it is seen that mothers of the fifteenth child would be 58 years old instead of 45·52, *i.e.*, there would be no fifteenth child. This leads us to what may be the most important element entering into this decreasing interval. Observe that the average age at the birth of the first child is 29·37 years—a high age. This is probably because the first order is weighted strongly by mothers who will have only one child as a result of late marriage; this type of mother is eliminated in the second order which in turn contains the type of mother who will have only two children as the result of marrying late but not quite so late. This sort of elimination progresses through the successive orders. In other words, it is probable that the lessening interval reflects strongly differential age at marriage and the differential number of births resulting therefrom. If this explanation is as important as it seems to be it gives additional value to Statement XXXV already given. This statement shows for the same period of years (1927-36) the average age of females at marriage.

The age of 29 for the first order appears high considering that the average age at marriage—similarly constant over the ten-year period—is 24. This would seem to be an excellent illustration of the importance of deviations from an average as compared with the average itself. It is obvious that while the age of the first order is 29, the mothers giving birth to a large number of children were much younger than this at the time of giving the first birth, *i.e.*, all the large families and even the moderate size families come from mothers younger than the average.

Average Order of Birth in Different Age Groups of Mothers.—Since the average thus conceals the rule it is necessary to show the converse side of the situation, *viz.*, the average order of birth in the different age groups of mothers. This is shown in Statement XLVI.

XLVI.—AVERAGE ORDER OF BIRTH TO MARRIED MOTHERS, BY AGE GROUP, CANADA, 1927-1936

Age of Mother	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Under 20	1·31	1·29	1·29	1·29	1·30	1·31	1·31	1·31	1·29	1·29
20-24	2·09	2·05	2·01	1·98	2·01	2·03	2·05	2·04	1·99	1·95
25-29	3·39	3·36	3·29	3·22	3·20	3·23	3·23	3·21	3·15	3·09
30-34	4·91	4·92	4·88	4·85	4·89	4·89	4·88	4·86	4·73	4·67
35-39	6·74	6·73	6·71	6·72	6·74	6·83	6·82	6·86	6·77	6·75
40-44	8·66	8·73	8·65	8·65	8·74	8·76	8·78	8·78	8·85	8·79
45-49	9·98	10·03	9·84	9·88	9·96	10·29	10·26	10·29	10·40	10·45

In Statement XLVI a trend of a certain kind is noticeable in the average order of births. It exemplifies a point shown later in Chart 12 (page 282), *viz.*, that the ages of 25-29 and 30-34 show a definite decline in the ten years while the other ages show a certain degree of constancy. The averages show that the orders of birth most representative of these ages centre around the fourth and fifth and it will be seen in Chart 12 that the decline in births is conspicuously large in these orders. Statement XLVI, therefore, would seem to show that the decline in births is in some way connected with certain age groups and this in time brings up the possibility that the decline in births is connected with certain types of mothers whether these types are generated by the individuality of the person or by the period of time through which these persons have passed.

This trend of decline in average order must be considered in conjuncture with the fact that the number of births in a given year is also declining; *i.e.*, the number of mothers appearing in the birth statistics of the year is declining. Thus, 1,000 mothers averaging 3·39 births would represent 3,390 total births. If the 1,000 were reduced to, say, 900 and the orders were reduced to 3·09, the total births would be reduced to 2,781; in other words, a double process is involved in this decline in the average order. According to such a process the population represented in families of this size would rapidly decline.

Total Potential Number of Children Represented by Disappearing Types of Mothers.—The double process is illustrated in Statement XLVII which shows the number of legitimate births and the average order of births in each year.

XLVII.—TOTAL AND AVERAGE NUMBER OF CHILDREN BORN TO FAMILIES REPRESENTED BY LEGITIMATE BIRTHS, CANADA, 1927-1936

Year	Families Represented by Legitimate Births	Children Born to Families Represented by Legitimate Births		Year	Families Represented by Legitimate Births	Children Born to Families Represented by Legitimate Births	
		Total	Average			Total	Average
1927	234,193	985,151	4·21	1932	233,855	953,547	4·08
1928	236,347	984,062	4·16	1933	220,709	899,649	4·08
1929	234,629	954,046	4·07	1934	219,029	892,800	4·08
1930	242,289	974,121	4·02	1935	218,919	871,421	3·98
1931	238,981	961,799	4·02	1936	217,524	852,770	3·92

Taking the end years, 1927 and 1936, it is seen that the number of births declined by 7·1 p.c. and the average order by 6·9 p.c. Taking now the total number of children represented by these two figures, as found in the third column of this statement, it is seen that it declined by 13·4 p.c. In other words, the 16,669 mother types that appear in 1927 and failed to appear in 1936 represented 132,381 children. If there is a real trend in the disappearance of mothers of this type, it is obvious that this disappearance will mean a greater difference in the reproduction rate than is represented in calculations already made in these rates. Again, it is possible that such a difference will be only temporary because, if it is only a certain type of mother that is disappearing, *viz.*, the one with the large family (5-10 children), then once she disappears completely a stationary or upward trend would possibly result.

Misleading Features of the Mean Ages and Orders.—It would seem that the ordinary average (the mean) is a rather unsatisfactory statistic as a means of describing features of the orders of birth. Statements XLIV and XLVI, the one showing the average age of mother for each order of birth and the other the average order of birth at each age group of mother, are cases in point. It is baffling to find the averages in each statement apparently constant from year to year, but this apparent constancy is misleading since a very small variation is significant. Still more baffling is it to find that the average age of mother of the first order of birth is 29 while the average order of birth of a mother of 29 is about 3. If we put these averages as probabilities, the point will be clearer. The probability is that the mother of the first child is 29 years of age whereas if we find a mother giving birth at the age of 29 the probability is that this is her third child. In other words, the probabilities from the point of view of the child and from the point of view of the mother are far apart and it is difficult to see what this means. Indeed, it would seem to suggest the advisability of questioning these averages. Now, there are methods of examining the validity of averages and in this case the method will be simple. Taking the average (mean) age of the first birth, *viz.*, 29·4, it has a standard deviation of 2·3 years which would mean that in the case of normal distribution it would be easily possible that a first birth would occur to mothers at ages all the way from 23 to 36; but it is decidedly not a normal distribution because the median age at first birth is found to be 24·1, *i.e.*, as many mothers of first births are under as over 24·1. There is a distance of 5·3 years between the mean and the median and a much greater distance between the mean and the age of most common occurrence of first births. This makes the average of 29 practically meaningless except as a measure of the manner in which a few first births at later and uncommon ages raise the mean age to a point of absurdity.

Modal Orders and Ages.—But, it is necessary to find some average by means of which the behaviour of the orders of birth may be examined. There is an average which is never misleading provided it can be found but it is not always possible to do so. It so happens that in the order of births this average actually does exist and stands out quite clearly. Statement XLIX will show that the common occurrence of the different orders of birth falls definitely into age groups. Thus, 43 p.c. of the first and second orders fall in the age group 20-24 and this varies very little throughout the decade 1927-36. Similarly, 37 p.c. of the third to the fifth orders fall in the age group 25-29, 38 p.c. of the sixth to the eighth orders fall in the group 30-34, 45 p.c. of the ninth to the thirteenth orders fall in the group 35-39 and 53 p.c. of the orders fourteen and over fall in the group 40-44. While these modes have not been obtained by refined methods, the fact that such a large proportion of the orders occur within them and occur so constantly justifies us in designating them as the *age of common occurrence* of the different orders. The number of each order which occurs outside these ages may be described as "unusual" or occurring at unusual ages. Thus, a very useful concept is suggested in connection with orders of birth—the occurrence of the usual as contrasted with that of the unusual. Statement XLVIII, then, shows the number of births occurring during the decade 1927-36 at usual ages and at unusual ages with the index of each set using 1927 as a base. Statement XLIX shows the percentage that the usual form of the total number of births in the stated orders. We are enabled, thus, to examine the behaviour of the usual and of the unusual throughout the decade.

XLVIII.—BIRTHS OCCURRING AT USUAL AND UNUSUAL AGES WITH THE INDEX OF EACH SET USING 1927 AS BASE, BY SINGLE YEARS, CANADA, 1927-1936

Year	Births of Orders Modal in Age Group					Births of Orders Other Than Modal in Age Group				
	1st and 2nd Orders in Age Group 20-24	3rd-5th Orders in Age Group 25-29	6th-8th Orders in Age Group 30-34	9th-13th Orders in Age Group 35-39	14th Order and over in Age Group 40-44	Orders Other Than 1st and 2nd in Age Group 20-24	Orders Other Than 3rd-5th in Age Group 25-29	Orders Other Than 6th-8th in Age Group 30-34	Orders Other Than 9th-13th in Age Group 35-39	Orders Other Than 14th and over in Age Group 40-44
NUMBER										
1927	38,794	29,496	14,242	10,090	1,852	51,745	50,231	23,746	12,370	1,627
1928	40,697	28,804	14,409	9,934	1,785	53,257	49,564	23,769	12,525	1,603
1929	42,281	28,149	13,673	9,425	1,769	55,056	47,948	22,909	11,873	1,546
1930	44,999	28,393	14,118	9,790	1,775	58,008	48,750	22,852	12,019	1,585
1931	43,614	28,863	13,876	9,601	1,744	57,582	48,148	22,041	11,962	1,550
1932	41,752	29,036	13,384	9,700	1,737	55,368	47,157	21,946	12,144	1,631
1933	38,547	28,142	12,653	9,331	1,599	52,123	45,154	20,442	11,243	1,475
1934	37,993	27,621	12,584	9,324	1,713	52,466	44,598	19,939	11,304	1,487
1935	39,530	27,160	11,976	8,980	1,660	54,448	43,680	19,580	10,488	1,417
1936	40,760	25,679	11,741	8,681	1,563	55,991	42,346	18,943	10,371	1,449
INDEX USING 1927 AS BASE										
1927	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1928	104·9	97·7	101·2	98·5	96·4	102·9	98·7	100·1	101·3	98·5
1929	109·0	95·4	96·0	93·4	95·5	106·4	95·5	96·5	96·0	95·0
1930	116·0	96·3	99·1	97·0	95·8	112·1	97·1	96·2	97·2	97·4
1931	112·4	97·9	97·4	95·2	94·2	111·3	95·9	92·8	96·7	95·3
1932	107·6	98·4	94·0	96·1	93·8	107·0	93·9	92·4	98·2	100·2
1933	99·4	95·4	88·8	92·5	86·3	100·7	89·9	86·1	90·9	90·7
1934	97·9	93·6	88·4	92·4	92·5	101·4	88·8	84·0	91·4	91·4
1935	101·9	92·1	84·1	89·0	89·6	105·2	87·0	82·5	84·8	87·1
1936	105·1	87·1	82·4	86·0	84·4	108·2	84·3	79·8	83·8	89·1

XLIX.—PERCENTAGES WHICH BIRTHS AT USUAL AGES FORM OF THE TOTAL NUMBER OF BIRTHS OF STATED ORDERS, BY SINGLE YEARS, CANADA, 1927-1936

Year	1st and 2nd Orders in Age Group 20-24	3rd-5th Orders in Age Group 25-29	6th-8th Orders in Age Group 30-34	9th-13th Orders in Age Group 35-39	14th Order and over in Age Group 40-44
1927	42·8	37·0	37·5	44·9	53·2
1928	43·3	36·8	37·7	44·2	52·7
1929	43·4	37·0	37·4	44·3	53·4
1930	43·7	36·8	38·2	44·9	62·8
1931	43·1	37·5	38·6	44·5	62·9
1932	43·0	38·1	37·9	44·4	61·6
1933	42·5	38·4	38·2	45·4	52·0
1934	42·0	38·2	38·7	45·2	63·5
1935	42·1	38·3	38·0	46·1	63·9
1936	42·1	37·7	38·3	45·6	51·9

The most important of the above two statements seems to be the second showing the percentages which the births of each set of orders falling in usual age groups form of the total number of births in these orders. The high degree of constancy gives these percentages at least an appearance of reliability. However, a certain variability does exist and it is easy to see that this variability has a time trend. The behaviour of the first and second orders is different from that of the subsequent orders. The time trend that exists seems to be partly obscured by increase and decrease in the number of births falling in each order from year to year during the decade. Accordingly, the percentages were examined to ascertain whether there was any system in the variability from year to year and how far this interfered with the trend. If we take the percentage the usual forms of all births as X_1, the first ten natural numbers describing the yearly trend as X_2 and the index of the number of the different births falling at usual ages, year by year, as X_3 and use the equation $X_1 = A + BX_2 + CX_3$ for each set of orders, we obtain very interesting results which are summarized as follows:—

Order of Birth	Correlation of P.C. Usual with Yearly Trend and Index of Usual	Yearly Increase[1] of P.C. Usual	Order of Birth	Correlation of P.C. Usual with Trend and Yearly Index of Usual	Yearly Increase[1] of P.C. Usual
1st and 2nd orders	·96	0·062	9th-13th orders	·76	−0·028
3rd-5th "	·93	0·143	14th order and over	·52	0·169
6th-8th "	·86	0·118			

[1] Independent of fluctuations caused by casual decline or increase in the number of births occurring in the order.

Concepts Suggested by the Modes.—A fair description of the findings would seem to be as follows:—

(1) In the case of all orders, except one set, an increase in the number of births throughout the decade led to a larger proportion of each order being found at usual ages (of mother) while a decrease led to a smaller proportion being found, *i.e.*, it was the usual ages that benefitted or suffered most.

(2) When (1) is allowed for, there was an upward trend throughout the decade in the proportion of births of the different orders falling at usual ages. In other words, there has been a gradual elimination of the unusual—except in the first and second orders of births.

These are concepts that should be quite easy to understand and these findings may have an exceedingly important bearing upon future birth rates. If the declining trend of the total number of births thus consists, partly at least, in the weeding out of the unusual, is it not probable that a point of stability will be reached when the unusual is eliminated?

Again, the first and second births (probably particularly the first births) behave quite differently as to time trend for the other orders. The tendency for these orders to occur at

unusual ages seems to be growing, after allowing for the other tendency, *viz.*, that as they increase and decrease greater or less proportions of them fall at usual ages. It was observed earlier in the chapter that first and second births were closely associated with current marriage rates and the latter in turn with economic conditions. This, of course, would suggest an explanation of the behaviour of first and second births, but there is another association that is very important. The orders under observation refer to legitimate births. By far the greater proportion of illegitimate births are probably of the first order and nearly all in the first and second orders. Illegitimate births form nearly 10 p.c. of the births of the first order. Thus, the figures of the first and second orders representing only legitimate births are very incomplete as representing the total number of births in these orders. Illegitimacy seems to be sensitive to economic conditions and to occur largely at the ages usual for first and second births. If illegitimate births were included there is little doubt that first and second births would be found to behave similarly to later orders.

Thus, a common factor in the behaviour of the birth rate would seem to be established, *viz.*, a line trend eliminating the unusual. It is unusual for a mother 15-19 to be giving birth to her fourth child or a mother 40-44 to her first child and this is becoming more unusual. Conversely, it is becoming more usual for the third child to have a mother in the age group 25-29, for the fourth child to have a mother 30-34, for the sixth child a mother 35-39 and for the fourteenth child to have a mother 45-49. If mothers 45-49 drop out of the picture, it is likely that the fourteenth child will also.

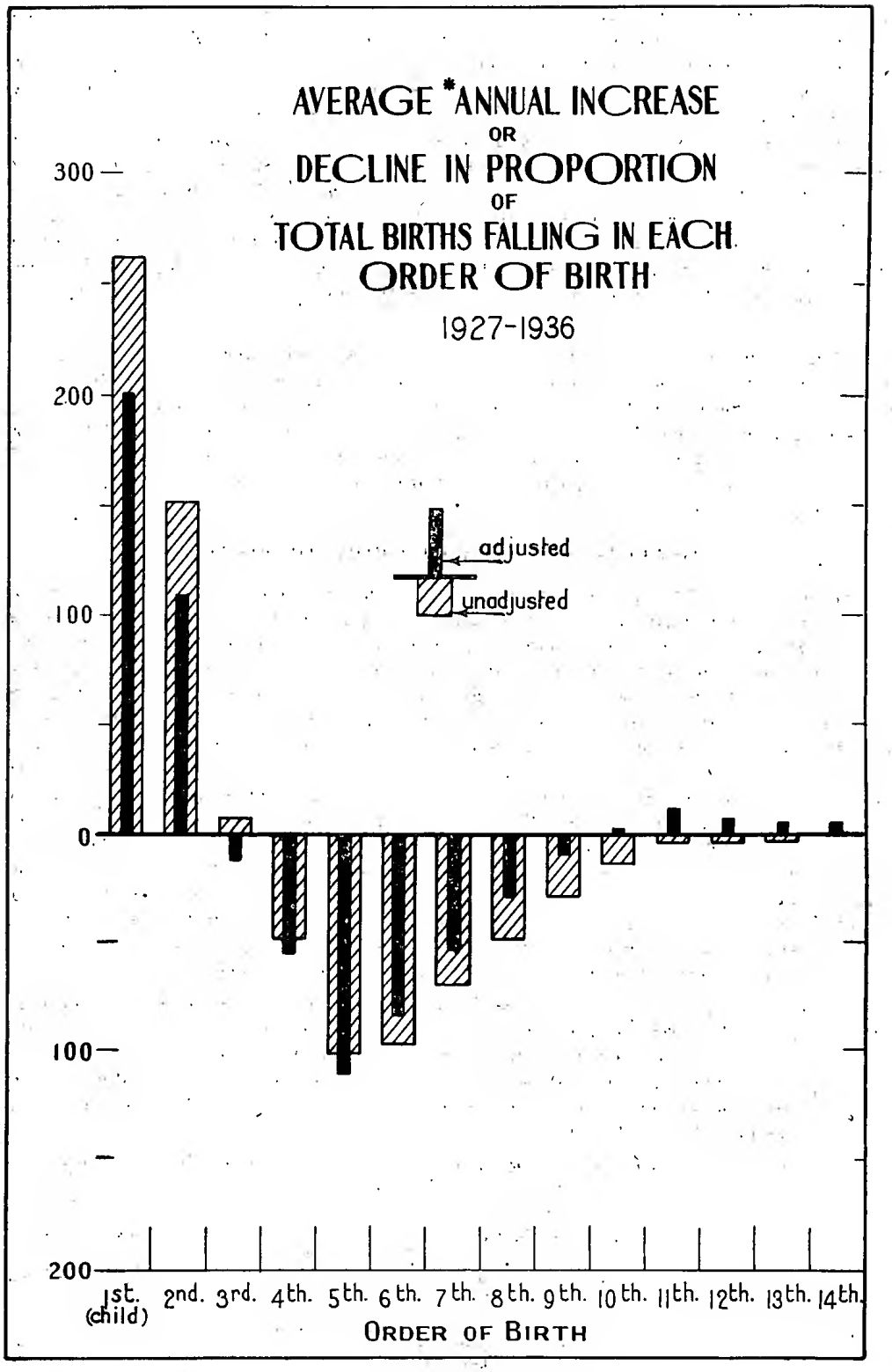
GENERAL SUMMARY OF ORDER OF BIRTH

Statements L and LI and Chart 12 are by way of summary and further elucidation of comments and data already presented in this chapter. Going back to Statement XXXII, we see in a general way that there is an upward trend from 1927-36 in the proportion falling in the first order, meaning, of course, that there is a downward trend in one or more of the higher orders. Similarily, but with more interruption, we see an upward trend in the second order. The order at which the upward trend ceases and the downward begins cannot be easily detected from the figures as they stand because of the interruptions mentioned; consequently, it was necessary to resort to some kind of measurement, as the matter is important. The trend of each order was measured by the line of best fit to the percentages of each year. So long as the slope of this line was positive the trend was upward. Thus, considering the unadjusted figures in the first order of birth, our line tells us that the proportion falling in the first order increases 0·262 per year on an average; in the second order, 0·153 per year and so on, the average increase per year becoming smaller until we reach the fourth order when the trend begins to be downward, decreasing 0·047 per year. This decrease becomes greater until we reach the fifth order which shows 0·102 decrease. As we ascend the orders from this point, the decreases become less and less until we reach the fourteenth order when the proportion becomes stationary.

The adjusted figures show slightly less increase in the number falling in the first and second orders of birth. The first decrease, 0·013, appears in the third order of birth and the decrease becomes greater until we reach the fifth, which also showed the greatest decrease in the unadjusted figures. From this point, 0·111 in the fifth order, the decreases gradually diminish until the tenth order and the remaining orders of birth show slight increases. The above results are shown in Statement L and Chart 12.

L.—AVERAGE ANNUAL INCREASE OR DECLINE IN PROPORTION FALLING IN EACH ORDER OF BIRTH, CANADA, 1927-1936

Order of Birth	Increase or Decline in		Order of Birth	Increase or Decline in	
	Unadjusted Orders of Birth	Adjusted Orders of Birth		Unadjusted Orders of Birth	Adjusted Orders of Birth
1st order of birth	+0·262	+0·201	9th order of birth	−0·029	−0·010
2nd " "	+0·153	+0·109	10th " "	−0·014	+0·002
3rd " "	+0·008	−0·013	11th " "	−0·004	+0·011
4th " "	−0·047	−0·054	12th " "	−0·004	+0·007
5th " "	−0·102	−0·111	13th " "	−0·003	+0·005
6th " "	−0·097	−0·085	14th " "	0·000	+0·005
7th " "	−0·070	−0·053	15th " "	−0·001	+0·003
8th " "	−0·049	−0·028			



*Average = the slope of the line of best fit for each order during the decade.

Chart 12

In general, we see that the first two orders of birth show increases over the ten-year period, the orders from the third to the ninth register decreases and the orders from the tenth on are fairly stationary. Statement LI—the distribution for Canada and the provinces—shows that this was no regional tendency but the general trend over the nine provinces.

LI.—PERCENTAGE OF TOTAL BIRTHS OF (A) LOWER ORDER THAN THIRD, (B) THIRD TO NINTH ORDER AND (C) TENTH ORDER AND OVER, CANADA AND PROVINCES, 1927, 1930, 1933 AND 1936

Province	Percentage of Total Births of											
	Lower Order than Third				Third to Ninth Order				Tenth Order and Over			
	1927	1930	1933	1936	1927	1930	1933	1936	1927	1930	1933	1936
Canada	38·66	42·51	41·08	44·48	53·45	50·09	51·25	48·17	7·89	7·40	7·67	7·36
Prince Edward Island	36·90	37·97	38·84	39·56	56·66	55·87	53·46	52·94	6·44	6·16	7·70	7·50
Nova Scotia	36·39	39·65	41·37	44·05	56·63	53·55	51·95	50·11	6·98	6·80	6·68	5·85
New Brunswick	33·16	35·25	34·59	38·26	58·01	55·16	54·86	51·63	8·83	9·60	10·55	10·11
Quebec	30·19	33·28	30·86	33·93	56·35	54·04	56·16	53·42	13·46	12·68	12·98	12·65
Ontario	46·87	50·76	49·82	53·42	49·40	45·91	46·53	43·13	3·73	3·33	3·65	3·45
Manitoba	40·84	46·09	46·61	49·92	53·59	48·35	47·99	45·30	5·57	5·56	5·40	4·79
Saskatchewan	37·69	42·77	41·57	44·56	55·82	50·97	52·24	49·53	6·49	6·27	6·19	5·91
Alberta	43·06	47·56	46·25	49·26	52·47	48·26	49·87	46·87	4·47	4·18	3·88	3·87
British Columbia	53·73	57·00	55·54	61·49	44·63	41·01	42·35	36·50	1·64	1·99	2·11	2·01

Thus the orders of birth which suffered in the period from 1927-36 were the fourth to the tenth orders. The very large family (10 and upwards) did not suffer. The family which would be large for English speaking people, city people, etc., did suffer.

CHAPTER IV

GROSS AND NET REPRODUCTION RATES

Introduction.—The interest taken in the downward trend of birth rates during the post-War period which has formed a noteworthy feature of the vital statistics of so many countries has led to the application of methods of measuring the decline in fertility. These are the gross and net reproduction rates.

Reproduction rates are often used as a stock-taking of the rather complicated issues of statistics of birth. These calculations are introduced to show the number of female children produced by each female in the population throughout the child-bearing period, assuming the birth and death rates of any given year. As the latter rates change from year to year it is obvious that the reproduction rates as calculated are subject to the same changes and, consequently, do not present a permanent picture such as would be presented if they were calculated on the data of a generation instead of the data of a single year. Nevertheless they are indicative, especially when a time series of such reproduction rates can be calculated. In the present chapter a series of gross reproduction rates are calculated for 1921 and 1931 in the case of the Registration Area and for 1921, 1926, 1931 and 1936 in the case of the Prairie Provinces. Obviously, the rates can be calculated only for the years when data for the total population are available, *i.e.*, census years. In the absence of data for calculating net reproduction rates, gross rates are valuable as having a fairly constant degree of approximation to the net rates, *i.e.*, subject only to as much variation in death rates as is seen by comparison of various life tables.

Gross Reproduction Rates.—The gross reproduction rates of Statement LII show in concise form the combined effect on the average fertility of all women of postponement of or abstention from marriage and of differences in fertility within marriage. The rate is subject to the criticism that it is based on the replacement of one sex by offspring of the same sex. For example, it is affected, though in comparatively slight degree, by differences in the masculinity rate of births. In spite of this fault, however, it presents a very significant measure of fertility and, though of comparatively recent development, is generally recognized as a very valuable method of summarizing specific fertility rates.

From the specific fertility rates of Statement XV for the average of 1921-22 and of 1931-32, gross reproduction rates have been computed for these two periods for the Registration Area considered as a whole and for each province which it contains.

The gross reproduction rate is intended to show how many female children each woman would produce during the child-bearing period, given a certain set of specific fertility rates, if no deaths occurred in the cohort of women while passing through this period. The steps which have been taken in the computation of these rates are as follows:—

Method of Computing.—1. The specific fertility rates of Statement XV have been added over the set of age periods, commencing with 15-19 and ending with 45-49 years and the sum has been multiplied by five because each age group comprises a five-year period. The result then represents the number of children born to each thousand women passing through the child-bearing period, assuming that no deaths take place during their passage through this period. For the Registration Area this "total fertility rate"* was 3,470 per thousand women or 3·47 per woman for 1921-22 and 2,848 per thousand women or 2·85 per woman for 1931-32.

2. The masculinity rate has been applied to this total fertility rate in order to obtain the number of female children born to each woman (instead of the number of children of both sexes) under these conditions. For the Registration Area the aggregate of the years 1921-22 gave a masculinity rate for births of 1·057. To obtain the gross reproduction rate the total fertility rate is divided by 2·057, giving for each woman an average of 1·69 female children. For 1931-32 the masculinity rate was 1·054, so that the total fertility rate is divided by 2·054, giving a gross reproduction rate of 1·39.

* Note the distinction from the more common meaning of the term as used on pages 261, 305 and 407.

Trend in Gross Reproduction Rates, 1921-1931.—Examination of the gross reproduction rates in Statement LII shows that not only the total of the eight provinces but each individual province suffered a decline in its gross reproduction rate between 1921-22 and 1931-32. The most substantial proportionate decline was in Manitoba where the rate fell from 1·94 for 1921-22 to 1·36 in 1931-32, a decline of 29·90 p.c. Next in order were Saskatchewan and British Columbia with proportionate declines of 19·71 p.c. and 19·38 p.c., respectively. The falling-off of the gross reproduction rate was least in the Maritime Provinces and, amongst these, least in Nova Scotia. In this province the decline was only from 1·71 to 1·63 or 4·7 p.c.

LII.—GROSS REPRODUCTION RATES, 1921-1922 AND 1931-1932 AND PERCENTAGE DECLINE OVER DECADE, REGISTRATION AREA AND PROVINCES

Province	Gross Reproduction Rate		P.C. Decline over Decade
	1921-22	1931-32	
Registration Area	1·69	1·39	17·75
Prince Edward Island	1·88	1·71	9·04
Novn Scotia	1·71	1·63	4·68
New Brunswick	2·10	1·93	8·10
Ontario	1·53	1·26	17·65
Manitoba	1·94	1·36	29·90
Saskatchewan	2·08	1·67	19·71
Alberta	1·89	1·60	15·34
British Columbia	1·29	1·04	19·38

Trend in Gross Reproduction Rates in the Prairie Provinces, 1921-1936.—In the case of the Prairie Provinces it is possible to calculate gross reproduction rates for four periods, *viz.*, 1921, 1926, 1931 and 1936. The rates of total fertility and gross reproduction as based upon these years are shown in Statement LIII.

LIII.—TOTAL FERTILITY AND GROSS REPRODUCTION, SHOWING RATE AND PERCENTAGE EACH YEAR FORMS OF 1921, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936

Province and Year	Total Fertility		Gross Reproduction	
	Rate	P.C. of 1921	Rate	P.C. of 1921
Prairie Provinces—				
1921	4·13	100·00	2·01	100·00
1926	3·54	85·71	1·72	85·57
1931	3·24	78·45	1·58	78·61
1936	2·71	65·62	1·32	65·67
Manitoba—				
1921	4·05	100·00	1·98	100·00
1926	3·17	78·27	1·53	77·27
1931	2·82	69·63	1·40	70·71
1936	2·34	57·78	1·13	57·07
Saskatchewan—				
1921	4·32	100·00	2·09	100·00
1926	3·88	89·81	1·89	90·43
1931	3·48	80·56	1·69	80·86
1936	2·95	68·29	1·43	68·42
Alberta—				
1921	3·85	100·00	1·89	100·00
1926	3·52	91·43	1·72	91·01
1931	3·37	87·53	1·62	85·71
1936	2·82	73·25	1·38	73·02

The gross reproduction rate shows a progressive decline over the four periods in the case of each province and, of course, for the total of the provinces. Thus it will be observed that according to their fertility rates, women of all conjugal conditions in 1921 in the Prairie Provinces would, on the average, bear 2·01 female children if there were no deaths amongst the women in passing through this period. By 1926 the figure had come down to 1·72, by 1931 to 1·58 and by 1936 to

1·32. By comparison with Statement LII it is seen that the 1936 rate for Manitoba was lower than for any province of Canada in 1931-32 except British Columbia. The statement helps to explain what has already been said about Manitoba's decline. However, in general, the most serious decline in these three provinces took place between 1931 and 1936. This can readily be seen from the index in the last column of Statement LIII which expresses the reproduction rate of each year as an index of the rate of 1921.

Net Reproduction Rates.—As already stated, the gross reproduction rate takes no account of the possibility of a woman dying during the child-bearing period. Not only that but it also makes no allowance for the possibility of a female dying before attaining child-bearing age. Such possibilities are not, as a matter of fact, within the scope of fertility but they do affect the extent to which females of one generation are being replaced by an equal or greater number of female offspring in the next. A measure has therefore come somewhat widely into use in recent years which, together with the fertility of women of all conjugal conditions, takes into account the mortality rates from birth to the end of the child-bearing period. This measure is called the net reproduction rate.

Method of Computing.—In order to present net reproduction rates for 1921-22 and 1931-32, *i.e.*, for the same periods as those of the gross reproduction rates in Statement LII, it was necessary to have life tables showing the number of survivors from a unit number of female births in each of the five-year age groups for which fertility rates have been computed. These figures of survivors were furnished by the Social Analysis Branch of the Bureau of Statistics but this work has only been carried out for the Registration Area as the survivorship, to apply to the fertility rates of 1921-22, required the computation of a special table. The steps in the computation of the net reproduction rates were as follows:—

1. From a given number of female births the life tables supplied by the Social Analysis Branch gave the number of survivors in each five-year group between the 15th and 50th birthdays.

2. The specific fertility rates of all women shown in Statement XV were respectively applied to the number of survivors in each age group. This gave the total number of children born to the survivors during the whole child-bearing period. (As the total number of survivors in each five-year age group was used instead of the average number in the five-year age group, the multiplication by five which was performed in computing the gross reproduction rate was unnecessary.)

3. The masculinity rates of 1921-22 and 1931-32 were applied in the same manner as described above in connection with the gross reproduction rate in order to obtain the number of female children of the total number born (*i.e.*, both sexes).

4. The total number of female children born through the whole child-bearing period to the survivors of a *given number* of females at birth was divided by this *given number* to find the number of female offspring who would, on the average, replace each female child born under the conditions of survivorship and fertility existing at the period for which the computation was made.

Trend in Net Reproduction Rates.—The net reproduction rate for the Registration Area computed in this manner was 1·41 for 1921-22 and 1·21 for 1931-32. The decline was 14·18 p.c. as against a decline of 17·75 p.c. shown in Statement LII for the gross reproduction rate. This smaller decline is, of course, the result of improved survivorship at the later period partly counteracting the effect of decreased fertility.

Although the decline of 14·18 p.c. in the net reproduction rate was substantial, it will be observed in Statement LIV to follow that the population of the eight provinces as a whole had still, in 1931-32, sufficiently high fertility to do more than reproduce itself, since five female children born would, on the average, under the existing conditions of fertility and mortality, be replaced by more than six female offspring.

As already explained, it was not considered feasible to compute the net reproduction rate by provinces for a period around 1921. This has been done, however, for the three years 1930-32, life tables computed in the Social Analysis Branch being used to obtain the number of survivors for these rates. The results, together with the gross reproduction rates by provinces for the same period, are given in Statement LIV.

LIV.—GROSS AND NET REPRODUCTION RATES, CANADA, REGIONAL DIVISIONS AND PROVINCES, 1930-1932

Province or Region	Gross Reproduction Rate 1930-32	Net Reproduction Rate 1930-32
Canada	1·55	1·32
Maritime Provinces	1·76	1·47
Prince Edward Island	1·66	1·41
Nova Scotia	1·63	1·37
New Brunswick	1·93	1·61
Quebec	1·93	1·54
Ontario	1·28	1·13
Prairie Provinces	1·58	1·39
Manitoba	1·37	1·21
Saskatchewan	1·70	1·50
Alberta	1·65	1·45
British Columbia	1·07	0·94
Registration Area	1·41	1·23[1]

[1] The life table on which the net reproduction rate of the Registration Area has been computed was for 1931 only instead of 1930-32. The difference thus produced would be very slight.

For Canada as a whole, the gross reproduction rate for these three years was 1·55, the net reproduction rate, 1·32. Among the provinces, Quebec and New Brunswick stood highest in the gross reproduction rate with the same figure, 1·93. In the net reproduction rate, however, although they were still the first two provinces, better survivorship rates in New Brunswick gave that province a figure of 1·61 while Quebec stood at 1·54. Only one province, British Columbia, showed a net reproduction rate below unity, the figure being 0·94. In other words, under the fertility and mortality conditions existing in British Columbia for the period 1930-32 the female population was not reproducing itself. Of the remaining provinces, Ontario showed the narrowest margin, its net reproduction rate being 1·13.

Mean Length of One Generation.—Since the unit represented by the reproduction rates is obviously a generation, it is necessary to state the mean length of a generation. Following a method described by Dublin and Lotka this was calculated on the basis of the specific fertility rates of 1930-32 and *Canadian Life Tables, 1931*. The mean length of one generation thus calculated was 29·76 years in the case of females and 34·38 in the case of males, referring to Canada as a whole.

PART II

DIFFERENTIAL FERTILITY

Limitations of Introduction of Differential Fertility in Study of Post-War Trend.—It would add to the value of study of the post-War trend in fertility if it could be considered in relation to differential fertility, *i.e.*, if we could examine and compare the extent of the trend for the different categories of the population under such classifications as rural and urban and regional divisions, according to economic position as indicated, say, by the occupation of the father, or for the various categories under such headings as racial origin and birthplace. For such study, however, the material is either not available or available but in an imperfect form.

So far as a classification of births by rural or urban residence is concerned, or a division of urban births into classes according to size, this is rendered impossible by the fact that from the first the assignment of births was made according to the locality of occurrence, not according to the residence of parents. The reasons underlying this choice were of a practical nature, mainly the difficulties surrounding assignment to place of residence on account of the inexact manner in which this was frequently given on the certificate. These difficulties, while still existing, have been at least partially overcome and the first classification of births by place of residence was made for the purpose of this monograph for the years 1930-32. Full details of the classifications will appear in Chapter VII. The routine year-by-year classification on this basis commenced only with the year 1936. To differentiate rural and urban trend on the basis of a classification of births by place of occurrence might be very misleading owing to the fact that there appears to be, in general, a tendency more and more for the event to take place in an institution and this would introduce a definite and quite important bias; the fact that many births in large urban institutions are to mothers residing in smaller urban units or in rural communities puts such an analysis out of the question.

Since the institutionalization of births is in itself an interesting subject apart from its importance as a disturbing factor in analysing regional birth rates, a brief summary of births in institutions is given in Statement LV.

LV.—PERCENTAGE BIRTHS IN INSTITUTIONS FORM OF TOTAL BIRTHS, CANADA, 1926-1936

Year	Live Births		
	Total	In Institutions	
		No.	P.C.
1926	232,750	41,521	17·8
1927	234,188	45,148	19·3
1928	236,757	50,979	21·5
1929	235,415	57,730	24·5
1930	243,495	64,850	26·6
1931	240,473	64,524	26·8
1932	235,666	64,779	27·5
1933	222,868	63,564	28·5
1934	221,303	66,441	30·0
1935	221,451	71,567	32·3
1936	220,371	76,047	34·5

Material for any analysis by occupation is also lacking for the early part of the period. The National System of Vital Statistics having been initiated only in the year 1920, it was natural that the tabulations of the early years should be less minute than at a later stage and no classification of births by occupation of the father was made for years sufficiently close to the Census of 1921 to allow of a comparison with a period close to the Census of 1931.

Dating from the first detailed report (for the year 1921), racial origin of parents and birthplace of parents have been tabulated year by year and province by province; but, for the period in the neighbourhood of the Census of 1921, neither the classification of births by racial origin nor the census classification by racial origin or birthplace is available by suitable age groups for detailed analysis. In the two next chapters, therefore, dealing respectively with racial origin and birthplace, the rates which are compared at the time of the two censuses are merely crude rates.

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CHAPTER V

RACIAL DIFFERENCES IN FERTILITY

BIRTHS AND BIRTH RATES BY RACIAL ORIGIN

Trend in the Registration Area.—Statement LVI shows, for the Registration Area, the annual number and index (based on 1921) of live births for certain racial origins over the period 1921-36, with crude rates for each of the specified origins for the average of 1921-22 and of 1931-32. In computing these rates it was assumed that in the estimates of population for 1922 and 1932 each racial origin bore the same proportion to the total as at the Censuses of 1921 and 1931, respectively. It might be disputed whether the gain in having the births of two years in each case for the purpose of stability is not offset by this assumption but an additional reason for basing the rates in each case on the births of two years was that the number of births to parents of unstated origin was much greater in 1921 than in subsequent years.

The births have been listed according to the racial origin of the father in the case of legitimate births and of the mother in the case of illegitimate births.

In addition to the racial origins which have been selected on account of their considerable numbers, the statement includes Indian, Negro, Chinese and Japanese because of special interest which might be attached to these origins. Indian, for the purpose of this statement, includes also half-breeds stated as such. With Chinese, Japanese and Negro births are included also those for which one parent was of one of these origins, but, if one parent belonged to one of these origins and the other parent to another, the origin of the father was given the preference.

Disposing first of these origins, it will be noted that the statement shows a marked upward trend for Indian births which, however, may be mainly attributed to constantly improving registration of Indians. At the beginning of the period one province, Manitoba, would not accept Indian registrations while in some other cases no adequate provision had been made for obtaining them. Through the efforts of the Provincial Registrars, the Department of Indian Affairs and the Dominion Bureau of Statistics, this condition was gradually remedied, so that the registration of Indian births at the end of the period, as evidenced by a crude birth rate of 32·90 per thousand, was well on its way to a satisfactory condition. Japanese births during the first half of the period showed an upward trend which was reversed during the last half. It is probable that the upward movement was, in the main, merely an apparent one due to improved birth registration as Japanese parents came to find the advantages arising from registration. Chinese births also showed some upward movement in the early part of the period but it was much more slight and uncertain and the general tendency has been downward. The crude birth rate for 1921-22 was only 8·92 and fell to 5·73 for 1931-32. These rates compare with 38·98 and 33·72, respectively for Japanese births but the disparity between these two sets of figures is very largely accounted for by the much more favourable age and sex distribution of the Japanese population of Canada. Negro births showed no very definite trend either upward or downward. Their birth rate was 23·99 for 1921-22 and 22·42 for 1931-32.

Looking at the absolute figures for the chief racial origins, it will be observed that out of a decline of some 24,000 births between the first and last year of the period, births to British stocks alone accounted for almost the full decline, the difference between 1921 and 1936 being more than 23,000. The birth rate of these origins for 1921-22 was 22·63 and for 1931-32 was 18·13. As among English, Irish and Scottish, the English birth rate showed the heaviest decline, the Irish the least. The English rate was still, however, the highest of the three for 1931-32.

French births showed a fluctuating movement of small extent over the period and were somewhat higher at the end than at the beginning but the crude rate declined from 33·51 in 1921-22 to 29·59 in 1931-32. In other words, the births to this racial stock did not appear to increase during this ten years in any proportion commensurate with the increase in population.

LVI.—NUMBER AND INDEX (BASED ON 1921) OF LIVE BIRTHS, BY SPECIFIED RACIAL ORIGIN[2], REGISTRATION AREA, 1921-1936, WITH CRUDE RATES FOR THE AVERAGE OF 1921-1922 AND OF 1931-1932

Year	All Races	British	English	Irish	Scottish	French	Belgian	Central and Eastern European	Chinese	Dutch	Hebrew	Indian	Italian	Japanese	Negro	Scandinavian
							BIRTHS									
1921	168,979	106,528	60,462	20,566	24,664	19,064	560	22,434	321	1,642	1,615	1,224	2,252	627	409	4,148
1922	164,194	98,813	54,893	19,715	23,327	18,886	518	21,571	347	1,587	1,642	1,529	2,145	613	423	3,878
1923	156,897	101,403	56,102	20,219	24,282	18,622	481	21,831	388	1,656	1,605	1,618	2,202	689	419	3,893
1924	157,595	100,112	54,853	20,682	23,728	19,120	479	22,687	345	1,800	1,476	2,134	2,292	715	426	3,991
1925	154,861	97,966	53,229	20,529	23,387	19,032	488	22,484	350	1,865	1,465	2,413	2,178	753	421	3,934
1926	150,585	93,975	51,128	19,467	22,522	18,838	509	22,827	324	1,944	1,366	2,391	2,061	801	392	3,992
1927	151,124	93,252	50,119	19,664	22,632	18,820	528	23,345	299	2,099	1,287	2,554	2,126	821	433	4,071
1928	153,136	93,622	49,954	19,813	22,968	18,694	544	24,371	254	2,267	1,400	2,538	2,093	872	437	4,293
1929	154,035	92,277	49,679	19,556	22,137	18,889	590	25,673	277	2,337	1,472	2,930	1,976	890	370	4,544
1930	159,870	94,984	50,903	20,411	22,782	19,176	604	28,001	276	2,433	1,495	3,071	2,061	853	394	4,843
1931	156,867	91,771	48,290	20,372	22,128	19,508	605	28,188	257	2,594	1,499	3,267	1,976	842	391	4,561
1932	153,450	88,668	46,527	19,751	21,510	19,639	548	27,763	247	2,551	1,453	3,690	1,885	735	412	4,607
1933	145,948	84,018	44,174	18,952	20,072	18,773	498	26,460	227	2,474	1,369	3,708	1,679	668	433	4,363
1934	144,871	83,170	43,314	18,868	20,063	18,766	545	26,091	212	2,535	1,283	3,990	1,576	648	421	4,422
1935	146,184	83,314	43,116	18,979	20,273	19,764	574	25,995	193	2,712	1,336	3,950	1,641	563	450	4,451
1936	145,086	83,210	43,199	19,103	19,967	19,685	546	25,227	202	2,700	1,324	3,982	1,536	575	477	4,477
Crude birth rate[1]																
1921-22	25·81	22·63	24·42	19·77	21·51	33·51	31·63	30·66	8·92	13·83	20·70	14·56	43·18	38·98	23·99	24·19
1931-32	20·60	18·13	18·81	17·77	17·24	29·59	24·65	25·18	5·73	17·39	15·18	32·90	26·18	33·72	22·42	20·45

[1] Crude rates for 1921-22 were computed as follows: the total births were divided by twice the female population of 1921. This gave a rate for "all races" of 54·22. To make an adjustment for the difference in population in 1922, the rate 54·22 was multiplied by a factor $\frac{2\ (\text{population}_{1922})}{\text{population}_{1921} + \text{population}_{1922}}$ or 0·994. The rate for the two years 1921-22 thus obtained was 53·89. Rates for each racial origin were obtained by the same method. Rates for 1931-32 were computed in a similar manner.

[2] See page 292.

LVI.—NUMBER AND INDEX (BASED ON 1921) OF LIVE BIRTHS, BY SPECIFIED RACIAL ORIGIN[2], REGISTRATION AREA, 1921-1936, WITH CRUDE RATES FOR THE AVERAGE OF 1921-1922 AND OF 1931-1932—Con.

Year	All Races	British	English	Irish	Scottish	French	Belgian	Central and Eastern European	Chinese	Dutch	Hebrew	Indian	Italian	Japanese	Negro	Scandinavian
							INDEX OF BIRTHS									
1921	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1922	97·2	92·8	90·8	95·9	94·6	99·1	92·5	96·2	108·1	96·7	101·7	124·9	95·2	97·8	103·4	93·5
1923	92·8	95·2	92·8	98·3	98·5	97·7	85·9	97·3	120·9	100·9	99·4	132·2	97·8	109·9	102·4	93·9
1924	93·3	94·0	90·7	100·6	96·2	100·3	85·5	101·1	107·5	109·6	91·4	174·3	101·8	114·0	104·2	96·2
1925	91·6	92·0	88·0	99·8	94·8	99·8	87·1	100·2	109·0	113·6	90·7	197·1	96·7	120·1	102·9	94·8
1926	89·1	88·2	84·6	94·7	91·3	98·8	90·9	101·8	100·9	118·4	84·6	195·3	91·5	127·8	95·8	96·2
1927	89·4	87·5	82·9	95·6	91·8	98·7	94·3	104·1	93·1	127·8	79·7	208·7	94·4	130·9	105·9	98·1
1928	90·6	87·9	82·6	96·3	93·1	98·1	97·1	108·6	79·1	138·1	86·7	207·4	92·9	139·1	106·8	103·5
1929	91·2	86·6	82·2	95·1	89·8	99·1	105·4	114·4	86·3	142·3	91·1	239·4	87·7	141·9	90·5	109·5
1930	94·6	89·2	84·2	99·2	92·4	100·6	107·9	124·8	86·0	148·2	92·6	250·9	91·5	136·0	96·3	116·8
1931	92·8	86·1	79·9	99·1	89·7	102·3	108·0	125·6	80·1	158·0	92·8	266·9	87·7	134·3	95·6	110·0
1932	90·8	83·2	77·0	96·0	87·2	103·0	97·9	123·8	76·9	155·4	90·0	301·5	83·7	117·2	100·7	111·1
1933	86·4	78·9	73·1	92·2	81·4	98·5	88·9	117·9	70·7	150·7	84·8	302·9	74·6	106·5	105·9	105·2
1934	85·7	78·1	71·6	91·7	81·3	98·4	97·3	116·3	66·0	154·4	79·4	326·0	70·0	103·3	102·9	106·6
1935	86·5	78·2	71·3	92·3	82·2	103·7	102·5	115·9	60·1	165·2	82·7	322·7	72·9	89·8	110·0	107·3
1936	85·9	78·1	71·4	92·9	81·0	103·3	97·5	112·4	62·9	164·4	82·0	325·3	68·2	91·7	116·6	107·9

The number of births of Dutch racial origin showed a considerable increase during the period. There were 1,642 in 1921 and only 1,587 in 1922, but in 1935 and 1936 the number of births of this racial origin was in the neighbourhood of 2,700. A mere increase in the Dutch population between 1921 and 1931 did not by any means account for the increase in Dutch births during the decade, since the rate for 1921-22 was only 13·83 and increased to 17·39 for 1931-32. Both rates have an artificial appearance, the first one particularly so. This may be attributed to the confusion of Dutch racial origin with German, of which there is evidence at the beginning of the period under review. It would produce its effect on the birth rate, of course, by increasing the number of births returned as Dutch in less proportion than the increase in the census population returned as Dutch.

Italian births showed, on the whole, a well-marked downward trend during the period, though fluctuations were frequent. The rate for 1921-22 was the highest of any racial origin listed in the statement, 43·18, but after a lapse of ten years it had declined to 26·18 for 1931-32.

In spite of a very substantial increase in the Hebrew population between 1921 and 1931, the number of births during the period showed a tendency to fall off. The rate for 1921-22 was 20·70; for 1931-32, 15·18. The downward trend continued, in the main, through the remaining years of the period with the result that Hebrew births, which in 1921 numbered 1,615 and in 1922 numbered 1,642, gave a total of only 1,324 in 1936. This was not the lowest year of the period, for 1927 had shown only 1,287 births and 1934 only 1,283.

Scandinavian racial origins, which include Danish, Icelandic, Norwegian and Swedish, showed a slight upward trend in numbers with a downward fluctuation in certain years. Between 1921-22 and 1931-32 the rate fell from 24·19 to 20·45 and declined during the period somewhat less proportionately than that of "all races."

Owing to the difficulty in bringing together figures from vital statistics records and from census compilations for the races of Central and Eastern Europe treated separately, these origins have been combined in the statement. They include German, Russian, Finnish, Polish, Ukrainian, "Austrian" and the origins of the Balkan states, as well as those racial origins from the smaller states which were formed after the War in territory formerly belonging to Russia. The inclusion of German is due to the fact that many inhabitants of the territory forming the old Austro-Hungarian Empire were of Germanic origin and speech and an unknown number of those returned as Austrian were in the same category. Some confusion must also be expected between Ukrainian and Russian, though probably confined, in the main, to the beginning of the period. Ukrainians from the old Austro-Hungarian Empire are frequently returned as "Austrian."

In absolute numbers the racial origins of Central and Eastern Europe show, in general, an upward movement during the period but the highest number of births for these origins was in 1930 and 1931 and from this point a decline of nearly 3,000 took place before the end of the year 1936. The birth rate of these origins was 30·66 in 1921-22 and 25·18 in 1931-32. This decline, it may be observed was proportionately somewhat smaller than that of all racial origins combined.

Trend in Canada as a Whole.—Statement LVII presents by racial origin for Canada (nine provinces) the annual number and index (based on 1926) of births for the years 1926-36.

In 1926 we have 232,750 births and then an upward trend to 1930, when the number was 243,495. From this point there were yearly reductions until 1936, with the exception of 1935 which showed an increase of 148 over the previous year. The 1936 figure, 220,371 births, showed a marked decrease from that of the beginning of the period. This decrease of 12,379 is almost wholly accounted for by the decrease in births to British stocks of 11,774, a fall from 100,612 in 1926 to 88,838 in 1936. The fall in births of English origin was 8,386 and of Scottish origin, 2,742. Irish make up the remaining decline of 729.

Births of French origin varied irregularly throughout the whole period, reaching their high of 92,305 in 1928 and their low of 85,551 in 1934 and showing slight recoveries in 1935 and 1936.

Of the other main origins we find Dutch with the large percentage increase of 37·3. In 1926 there were 1,977 Dutch births, increasing not uninterruptedly to 2,714 in 1936. The number of Italian births was 2,823 in 1926 and 2,919 in 1927 but gradually declined to reach a low of

LVII.—NUMBER AND INDEX (BASED ON 1926) OF LIVE BIRTHS, BY SPECIFIED RACIAL ORIGIN[2], CANADA (NINE PROVINCES), 1926-1936, WITH CRUDE RATES FOR THE AVERAGE OF 1931-1932

Year	All Races	British	English	Irish	Scottish	French	Belgian	Central and Eastern European	Chinese	Dutch	Hebrew	Indian	Italian	Japanese	Negro	Scandinavian
BIRTHS																
1926	232,750	100,612	54,405	21,614	23,713	91,131	580	23,441	337	1,977	2,051	2,621	2,823	802	417	4,026
1927	234,188	99,949	53,335	21,866	23,890	92,136	604	23,895	308	2,123	1,970	2,757	2,919	821	458	4,128
1928	236,757	100,283	53,194	22,064	24,129	92,305	627	24,906	265	2,299	2,155	2,747	2,871	873	466	4,343
1929	235,415	98,627	52,869	21,577	23,257	90,361	655	26,325	290	2,368	2,188	3,116	2,743	891	401	4,620
1930	243,495	101,850	54,312	22,601	24,022	91,877	680	28,852	287	2,462	2,209	3,296	2,768	853	438	4,926
1931	240,473	98,500	51,697	22,461	23,342	92,241	678	29,154	270	2,615	2,173	3,459	2,687	843	414	4,647
1932	235,666	95,182	49,804	21,797	22,691	91,470	609	28,814	261	2,581	2,204	3,891	2,509	735	433	4,696
1933	222,868	89,923	47,212	20,773	21,104	85,917	559	27,401	246	2,506	2,136	3,972	2,269	670	454	4,440
1934	221,303	88,934	46,297	20,675	21,023	85,551	604	26,980	223	2,554	2,105	4,266	2,143	649	434	4,513
1935	221,451	89,129	46,081	20,835	21,255	85,606	639	26,751	215	2,735	2,171	4,237	2,195	563	470	4,518
1936	220,371	88,838	46,019	20,885	20,971	85,707	633	26,018	210	2,714	2,147	4,289	2,048	575	490	4,558
Crude birth rate[1] 1931-32	22·83	17·89	18·41	17·88	17·01	31·19	23·20	24·98	5·68	17·34	13·88	30·81	26·31	33·68	21·65	20·39
INDEX OF BIRTHS																
1926	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1927	100·6	99·3	98·0	101·2	100·7	101·1	104·1	101·9	91·4	107·4	96·1	105·2	103·4	102·4	109·8	102·5
1928	101·7	99·7	97·8	102·1	101·8	101·3	108·1	106·2	78·6	116·3	105·1	104·8	101·7	108·9	111·8	107·9
1929	101·1	98·0	97·2	99·8	98·1	99·2	112·9	112·3	86·1	119·8	106·7	118·9	97·2	111·1	96·2	114·8
1930	104·6	101·2	99·8	104·6	101·3	100·8	117·2	123·1	85·2	124·5	107·7	125·8	98·1	106·4	105·0	122·4
1931	103·3	97·9	95·0	103·9	98·4	101·2	116·9	124·4	80·1	132·3	105·9	132·0	95·2	105·1	99·3	115·4
1932	101·3	94·6	91·5	100·8	95·7	100·4	105·0	122·9	77·4	130·6	107·5	148·5	88·9	91·6	103·8	116·6
1933	95·8	89·4	86·8	96·1	89·0	94·3	96·4	116·9	73·0	126·8	104·1	151·5	80·4	83·5	108·9	110·3
1934	95·1	88·4	85·1	95·7	88·7	93·9	104·1	115·1	66·2	129·2	102·6	162·8	75·9	80·9	104·1	112·1
1935	95·1	88·6	84·7	96·4	89·6	93·9	110·2	114·1	63·8	138·3	105·9	161·7	77·8	70·2	112·7	112·2
1936	94·7	88·3	84·6	96·6	88·4	94·0	104·0	111·0	62·3	137·3	104·7	163·6	72·5	71·7	117·5	113·2

[1] See footnote 1 to Statement LVI.
[2] See page 292.

2,048 in 1936. Scandinavian births showed considerable fluctuation from a low of 4,026 in 1926 to 4,558 in 1936 but over the whole period had a percentage increase of 13·2. Births to Central and Eastern European origins had an increase of some 5,700 births from 1926 to 1931 and, although declining gradually from 1931 to 1936, showed a percentage increase of 11·0 for the whole period.

Beginning with 2,051 in 1926, births to Hebrew origin reached a high of 2,209 in 1930. Considerable fluctuation was in evidence but the tendency was to increase and in 1936 we have 2,147.

Indian births, showing an almost uninterrupted increase from 1926, reached 4,266 in 1934 and maintained that level, showing 4,289 in 1936. The absolute figures for births to Japanese show an upward trend reaching a high of 891 in 1929, gradually declining to 563 in 1935 and then increasing very slightly to 575 in 1936. At the beginning of the period, Chinese births show a tendency to decrease and, although in 1929 a small increase is shown, the general tendency is downward, giving a percentage decrease of 37·7 over the whole period. Births of Negro origin fluctuated over the period but, on the whole, showed an increase of some 17 p.c.

Statement LVII shows also rates for the average of 1931-32 which have been computed using the population figures of 1931, the only decennial census year in this period. For "all races" the rate is 22·83. This, however, is surpassed by Japanese with 33·68, French with 31·19, Indian with 30·81, Italian with 26·31, Central and Eastern European with 24·98 and Belgian with 23·20. For all British stocks the rate for the total is somewhat lower than for "all races." Individually, these range from English, 18·41 to Scottish, 17·01. The lowest rate of all races is shown by Chinese, 5·68, due to the unfavourable sex distribution of the population. Others under the average were: Scandinavian, 20·39; Negro, 21·65; Dutch, 17·34; Hebrew, 13·88.

Trend in Quebec.—With her entry into the National System of registration in 1926, Quebec contributed 82,165 births to the total for Canada, this figure increasing to 83,621 in 1928. Although in the year 1929 some 2,200 less than the 1928 births were registered, the years 1930 and 1931 regained the former level. From these figures, 83,625 and 83,606, the following years showed a gradual falling off to 75,267 in 1935 and 75,285 in 1936, a decline of 6,880 births for the decade.

Births to the French origin, decreasing from 72,293 in 1926 to 66,022 in 1936, account for 6,271 of the total decline. This is the greatest decrease in absolute figures but is lower in percentage than the decrease in births of British origin. The percentage decline for French was 8·7 and for the British, 15·2. French births reached a peak of 73,611 in 1928 (probably this increase over the years 1926 and 1927 was partially due to better registration) and their lowest point was 65,842 in 1935. Births to British stock, contributing only 8 p.c. of the births in the province of Quebec, were around 6,600 for the first three years, fluctuated from 6,350 in 1929 to 6,866 in 1930 which was the peak year and then declined year by year with the exception of 1935 to their lowest figure, 5,628 births in 1936.

The other origins contributing any appreciable number of births were Italian, Hebrew, Central and Eastern European and Indian. Of these only the Italian showed a decrease. Starting with 762 in 1926 and 793 in 1927, the Italian births declined with one exception to 512 in 1936. Hebrew births numbered 685 at the beginning of the period and 755 in 1928; after showing a slight downward trend to 1931 with a low in that year of 674, they recovered gradually to 835 in 1935 and 823 in 1936. Central and Eastern European with 614 births in 1926 had their low of 535 in 1928 and from this point improved to 1,051 in 1932. From then on they showed a decrease to 756 in 1935 with a small recovery to 791 in 1936. The Indian births fluctuated from 230 in 1926 to 192 in 1931. From here they showed slight but steady increases to a high of 307 in 1936.

The census year, 1931, is the only one in this period for which we have population by racial origin, so we are unable to make any comparisons of the beginning and the close of the period. However, we have computed the crude rates for the average of 1931-32 (see Statement LVIII).

The French birth rate, 31·65, is the only one higher than the rate for "all races" which was 28·68. Italian comes next with a rate of 26·71 and Central and Eastern European third with 20·54. Among the British races with a rate for the total of 15·21 we find the Irish with 18·98, the English with 14·15 and the Scottish with 13·64. The Hebrew rate for this period was 11·79 and the Indian rate 14·50.

LVIII.—NUMBER AND INDEX (BASED ON 1926) OF LIVE BIRTHS, BY SPECIFIED RACIAL ORIGIN[2], QUEBEC, 1926-1936, WITH CRUDE RATES FOR THE AVERAGE OF 1931-1932

Year	All Races	British	English	Irish	Scottish	French	Belgian	Central and Eastern European	Chinese	Dutch	Hebrew	Indian	Italian	Japanese	Negro	Scandinavian
BIRTHS																
1926	82,165	6,637	3,277	2,147	1,191	72,293	71	614	13	33	685	230	762	1	25	34
1927	83,064	6,697	3,216	2,202	1,258	73,316	76	550	9	24	683	203	793	–	25	57
1928	83,621	6,661	3,240	2,251	1,161	73,611	83	535	11	32	755	209	778	1	29	50
1929	81,380	6,350	3,190	2,021	1,120	71,472	65	652	13	31	716	186	767	1	31	76
1930	83,625	6,866	3,409	2,190	1,240	72,701	76	852	11	29	714	225	707	–	44	83
1931	83,606	6,729	3,407	2,089	1,214	72,733	73	966	13	21	674	192	711	1	23	86
1932	82,216	6,514	3,277	2,046	1,181	71,831	61	1,051	14	30	751	204	624	–	21	89
1933	76,920	5,905	3,038	1,821	1,032	67,144	61	941	19	32	767	264	590	2	21	77
1934	76,432	5,764	2,983	1,807	960	66,785	59	889	11	19	822	276	567	1	13	91
1935	75,267	5,815	2,965	1,856	982	65,842	65	756	22	23	835	287	554	–	20	67
1936	75,285	5,628	2,820	1,782	1,004	66,022	57	791	8	14	823	307	512	–	13	81
Crude birth rate[1] 1931-32	28·68	15·21	14·15	18·98	13·64	31·65	15·40	20·54	4·88	13·90	11·79	14·50	26·71	11·56	13·26	17·63
INDEX OF BIRTHS																
1926	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1927	101·1	100·9	98·1	102·6	105·6	101·4	107·0	89·6	69·2	72·7	99·7	88·3	104·1	–	100·0	167·6
1928	101·8	100·4	98·9	104·8	97·5	101·8	116·9	87·1	84·6	97·0	110·2	90·9	102·1	100·0	116·0	147·1
1929	99·0	95·7	97·3	94·1	94·0	98·9	91·5	106·2	100·0	93·9	104·5	80·9	100·7	100·0	124·0	223·5
1930	101·8	103·5	104·0	102·0	104·1	100·6	107·0	138·8	84·6	87·9	104·2	97·8	92·8	–	176·0	244·1
1931	101·8	101·4	104·0	97·3	101·9	100·6	102·8	157·3	100·0	63·6	98·4	83·5	93·3	100·0	92·0	252·9
1932	100·1	98·1	100·0	95·3	99·2	99·4	85·9	171·2	107·7	90·9	109·6	87·4	81·9	–	84·0	261·8
1933	93·6	89·0	92·7	84·8	86·6	92·9	85·9	153·3	146·2	97·0	112·0	114·8	77·4	200·0	84·0	226·5
1934	93·0	86·8	91·0	84·2	80·6	92·4	83·1	144·8	84·6	57·6	120·0	120·0	74·4	100·0	52·0	267·6
1935	91·6	87·6	90·5	86·4	82·5	91·1	91·5	123·1	169·2	69·7	121·9	124·8	72·7	–	80·0	197·1
1936	91·6	84·8	86·1	83·0	84·3	91·3	80·3	128·8	61·5	42·4	120·1	133·5	67·2	–	52·0	238·2

[1] See footnote 1 to Statement LVI.
[2] See page 292.

ORDER OF BIRTH BY RACIAL ORIGIN

Statement LIX shows the average number of children (1) born alive, (2) now living (*i.e.*, at date of report of latest birth), (3) born dead and (4) born alive or dead to mothers of stated racial origin, an extract from Table 10, Part III, page 350, which shows this same information by age group of mother.

LIX.—AVERAGE NUMBER OF CHILDREN (1) BORN ALIVE, (2) NOW LIVING, (3) BORN DEAD AND (4) BORN ALIVE OR DEAD, BY RACIAL ORIGIN OF MOTHER, CANADA, 1930

Racial Origin of Mother	Average No. of Children			
	Born Alive	Now Living	Born Dead	Born Alive or Dead
All races	3·92	3·47	0·10	4·02
British	3·08	2·86	0·11	3·19
English	3·05	2·83	0·11	3·15
Irish	3·27	3·01	0·12	3·39
Scottish	3·01	2·80	0·11	3·12
French	4·97	4·23	0·09	5·06
Belgian	3·16	2·88	0·08	3·24
Central and Eastern European	3·71	3·33	0·10	3·80
Austrian	4·30	3·83	0·13	4·43
Bulgarian	1·56	1·37	0·11	1·67
Czech and Slovak	2·80	2·54	0·07	2·87
Finnish	2·22	2·04	0·10	2·32
German	3·78	3·44	0·10	3·88
Greek	3·01	2·68	0·15	3·16
Hungarian	3·35	2·89	0·09	3·44
Polish	3·42	3·07	0·09	3·51
Roumanian	4·37	3·75	0·14	4·51
Russian	4·03	3·62	0·10	4·13
Serb and Croat	2·92	2·60	0·10	3·02
Ukrainian	3·92	3·46	0·10	4·01
Chinese	4·59	4·37	0·05	4·64
Dutch	3·82	3·47	0·09	3·91
Hebrew	2·34	2·23	0·08	2·41
Indian	4·43	3·46	0·08	4·51
Italian	3·71	3·29	0·12	3·83
Japanese	3·57	3·35	0·07	3·64
Negro	4·29	3·74	0·20	4·49
Scandinavian	3·21	3·00	0·09	3·30
Danish	2·77	2·58	0·10	2·87
Icelandic	3·49	3·28	0·11	3·61
Norwegian	3·31	3·11	0·09	3·40
Swedish	3·20	2·99	0·08	3·28

Statement LX contains a summary of the same data adjusted for differences in ages of mothers. There is a striking lack of variation in the proportion now living of the number born alive, ranging from 95 p.c. in the case of the Chinese to 78 p.c. in the case of Indians as compared with a range of 4·77 children born alive in the case of the French to 1·22 in the case of the Bulgarian. The average number born dead ranges from 0·20 in the case of Negro to 0·05 in the case of Chinese mothers. The number of births alive or dead is highest for Roumanian mothers (4·88) and lowest for Hebrew mothers (2·67). There seems to be no evidence in the data of a clear-cut division along racial lines. This would seem to make the data of Statements LIX and LX none the less valuable in showing the differential number of births to a race. The standard deviation of the average number born alive as in Statement LX is 0·78 in an average of 3·57. The differential in the birth rates shown in Statement LVI should not be attributed exclusively to racial differences which may be in fact subordinate to associated differentials of age and sex distribution, urbanization, etc.

LX.—AVERAGE NUMBER OF CHILDREN (1) BORN ALIVE, (2) NOW LIVING, (3) BORN DEAD AND (4) BORN ALIVE OR DEAD, ADJUSTED FOR DIFFERENCES IN AGE DISTRIBUTION OF MOTHERS, BY RACIAL ORIGIN OF MOTHER, CANADA, 1930

Racial Origin of Mother	Average No. of Children				Proportion of	
	Born Alive	Now Living	Born Dead	Born Alive or Dead	Children Now Living to Children Born Alive	Children Born Dead to Children Born Alive or Dead
All races	3·92	3·47	0·10	4·02	88·52	2·49
British	3·12	2·89	0·11	3·23	92·63	3·41
English	3·15	2·92	0·11	3·26	92·70	3·37
Irish	3·21	2·95	0·12	3·32	91·90	3·61
Scottish	2·98	2·77	0·11	3·08	92·95	3·57
French	4·77	4·07	0·09	4·85	85·32	1·86
Belgian	3·26	2·96	0·09	3·34	90·80	2·69
Central and Eastern European	3·97	3·56	0·10	4·08	89·67	2·45
Austrian	4·42	3·93	0·14	4·55	88·91	3·08
Bulgarian	1·22	1·06	0·08	1·30	86·89	6·15
Czech and Slovak	3·17	2·89	0·08	3·25	91·17	2·46
Finnish	2·63	2·38	0·12	2·75	90·49	4·36
German	3·88	3·53	0·10	3·98	90·98	2·51
Greek	3·02	2·68	0·16	3·18	88·74	5·03
Hungarian	3·75	3·22	0·09	3·84	85·87	2·34
Polish	3·83	3·41	0·10	3·93	89·03	2·54
Roumanian	4·73	4·04	0·15	4·88	85·41	3·07
Russian	4·07	3·66	0·10	4·17	89·93	2·40
Serb and Croat	3·26	2·89	0·12	3·38	88·65	3·55
Ukrainian	4·48	3·94	0·11	4·59	87·95	2·40
Chinese	4·34	4·14	0·05	4·39	95·39	1·14
Dutch	3·88	3·52	0·09	3·97	90·72	2·27
Hebrew	2·59	2·45	0·08	2·67	94·59	3·00
Indian	4·75	3·69	0·08	4·84	77·68	1·65
Italian	3·83	3·39	0·12	3·95	88·51	3·04
Japanese	3·47	3·26	0·07	3·54	93·95	1·98
Negro	4·42	3·85	0·20	4·62	87·10	4·33
Scandinavian	3·24	3·03	0·09	3·33	93·52	2·70
Danish	2·99	2·77	0·10	3·09	92·64	3·24
Icelandic	3·26	3·06	0·10	3·36	93·87	2·98
Norwegian	3·29	3·08	0·09	3·37	93·62	2·67
Swedish	3·28	3·07	0·08	3·36	93·60	2·38

ACCUMULATED BIRTHS BY RACIAL ORIGIN OVER THE PERIOD OF RECORDS

While importance is usually attaehed to differential rates in eonsidering births by raeial origin, it is obvious from the foregoing statement of trend that these differential rates lose a great deal of their significance because of their rapid changes; *e.g.*, one race may to-day show a rate quite different from that of another but if its rate declines more rapidly it is obvious that in time it will not show this differenee. It would be valuable, if it were possible to do so, to measure the comparative rates of increase and deeline in order to arrive at some conclusion as to when such situations should arise but, obviously, this cannot be done owing to the facts that (1) we have no yearly population figures for precise rates and (2) the period of observation covered by the vital statistics records is so short. Furthermore, as will be seeh in a later section, there is a proeess going on which seriously complieates a study of this kind, *viz.*, the amalgamation of raees, to say nothing of a fact already observed, *viz.*, that there is evidence of some eonfusion in reporting races. For these reasons, and principally that the amalgamation of races seems to be proceeding rapidly, it will be useful to take stock of the total contribution of the different races to the births during the period of observation. These were not exactly contributions to the population since deaths occurring among these births cannot be differentiated by raee and since differential infant mortality is probably a very important faetor, but they are roughly proportional to eontributions to the population. Accordingly, Statement LXI shows the total number of births appearing in the nine provinces over the eleven-year period, 1926-36, differentiating twelve individual racial origins and two groups which could not be shown as individual origins, *viz.*, the Seandinavians and the Central and Eastern Europeans. In this statement the British races are counted as one race and thus the changing percentages are not influeneed by intermarriage among English, Irish, Scottish and Welsh.

In spite of the risk of doing so, an attempt is shown in the statement to estimate the probable number of these births alive in 1936 on the assumption of uniform infant and child mortality, *viz.*, that of the nine provinces. This is merely to give a rough idea of the net contributions, since, as already mentioned, differential mortality may be an important factor.

LXI.—NUMERICAL AND PERCENTAGE DISTRIBUTION OF CHILDREN BORN OVER THE PERIOD 1926-1936 WITH THE PROBABLE NUMBER ALIVE IN 1936, BY RACIAL ORIGIN, CANADA

Racial Origin[1]	Children Born 1926-36		Probable No. Alive in 1936
	No.	P.C.	
All races	2,544,737	100·0	2,303,150
British	1,051,827	41·3	951,545
English	555,225	21·8	502,144
Irish	237,148	9·3	214,678
Scottish	249,397	9·8	225,609
French	984,302	38·7	890,885
Belgian	6,838	0·3	6,192
Central and Eastern European	292,537	11·5	264,966
Chinese	2,912	0·1	2,629
Dutch	26,934	1·1	24,438
Hebrew	23,509	0·9	21,296
Indian	38,651	1·5	35,137
Italian	27,975	1·1	25,263
Japanese	8,275	0·3	7,469
Negro	4,875	0·2	4,419
Scandinavian	49,415	1·9	44,771

[1] See page 292.

During the 11 years there were 2,544,737 births to all origins. The estimate of probable survivors of these *in toto* is not complicated by the difficulties mentioned and amount to 2,303,150 who should be 10 years of age and under in 1936, a very small number being 11 years of age. This number can be compared with the number 10 years and under in the nine provinces in 1931, *viz.*, 2,439,344, from whom should be deducted a few in Yukon and Northwest Territories but to whom should be added some at 11 years of age. The probability that some of the 2,300,000 left the country need not be great since during the period emigrants and immigrants practically balanced. This means, then, a decline of considerably more than 100,000 in the population at these ages.

The contributions of the different races and racial groups to the total of 2,544,737 births were as follows: British, 41·3 p.c., consisting of English, 21·8 p.c., Irish, 9·3 p.c. and Scottish, 9·8 p.c.; French, 38·7 p.c.; Belgian, 0·3 p.c.; Central and Eastern European, 11·5 p.c.; Chinese, 0·1 p.c.; Dutch, 1·1 p.c.; Hebrew, 0·9 p.c.; Indian, 1·5 p.c.; Italian, 1·1 p.c.; Japanese, 0·3 p.c.; Negro, 0·2 p.c.; Scandinavian, 1·9 p.c.; or, to summarize, 41·3 p.c. British, 38·7 p.c. French and 20·0 p.c. other races. The composite of the population under 10 years of age (not strictly comparable with distribution of accumulated births but the nearest the census data will permit) in 1931 was 44·3 p.c. British, 34·9 p.c. French and 20·8 p.c. other races. It is probable that if differential infant mortality were taken into consideration the proportions would be found not to have undergone very considerable changes.

TREND IN INTERMINGLING OF RACES AS SHOWN BY BIRTHS

The last section suggests the all-important subject of the trend in intermingling of races. The birth statistics show the racial origin of the father cross-classified by the racial origin of the mother. In this cross-classification it is easy to see where the races are intermingling by the fact that the two parents are of different origins. Statement LXII shows the percentage of the total births that have parents of different origins, the data being for the Registration Area from 1921 to 1936, for the total of the nine provinces from 1926 to 1936 and also for Quebec alone from 1926 to 1936. It shows also the number of births to parents of the same origin and the number to parents of different origins.

LXII.—TOTAL BIRTHS, BIRTHS TO PARENTS OF THE SAME RACIAL ORIGIN AND NUMBER AND PERCENTAGE BIRTHS TO PARENTS OF DIFFERENT RACIAL ORIGINS FORM OF TOTAL BIRTHS, REGISTRATION AREA, 1921-1936, CANADA AND QUEBEC, 1926-1936

Year	Total Births[1]	Births to Parents of Same Racial Origin	Births to Parents of Different Racial Origins	
			No.	P.C. of Total Births
Registration Area—				
1921	144,887	129,863	15,024	10·37
1922	146,840	129,851	16,989	11·57
1923	151,643	133,274	18,369	12·11
1924	152,183	133,255	18,928	12·44
1925	149,708	130,651	19,057	12·73
1926	145,897	126,496	19,401	13·30
1927	145,724	125,842	19,882	13·64
1928	147,006	126,190	20,816	14·16
1929	147,517	125,675	21,842	14·81
1930	153,195	130,508	22,687	14·81
1931	150,098	126,481	23,617	15·73
1932	146,672	122,968	23,704	16·16
1933	139,220	115,523	23,697	17·02
1934	138,427	113,822	24,605	17·77
1935	139,683	113,825	25,858	18·51
1936	138,287	111,577	26,710	19·31
Canada—				
1926	225,848	203,190	22,658	10·03
1927	226,400	203,401	22,999	10·16
1928	228,155	204,203	23,952	10·50
1929	226,446	201,400	25,046	11·06
1930	234,232	208,297	25,935	11·07
1931	231,195	204,264	26,931	11·65
1932	226,407	199,401	27,006	11·93
1933	213,655	186,841	26,814	12·55
1934	212,411	184,780	27,631	13·01
1935	212,354	183,452	28,902	13·61
1936	211,046	181,198	29,848	14·14
Quebec—				
1926	79,951	76,694	3,257	4·07
1927	80,676	77,559	3,117	3·86
1928	81,149	78,013	3,136	3·86
1929	78,929	75,725	3,204	4·06
1930	81,037	77,789	3,248	4·01
1931	81,097	77,783	3,314	4·09
1932	79,735	76,433	3,302	4·14
1933	74,435	71,318	3,117	4·19
1934	73,984	70,958	3,026	4·09
1935	72,671	69,627	3,044	4·19
1936	72,759	69,621	3,138	4·31

[1] Parents of stated origin.

Taking first the Registration Area over the 16-year period, 1921-36, it is seen that in 1921 the percentage of exogenous (*i.e.*, where the two parents are of different racial origins) was 10·37 while in 1936 it was 19·31, *i.e.*, the process of intermingling had almost doubled. Furthermore, when the rates of increase of the percentages are compared at the beginning and at the end there is evidence of acceleration in the process. Thus, during the first eight years it went from 10·37 to 14·16, *i.e.*, moved up 3·79 points; during the last eight years it moved from 14·81 to 19·31 or 4·50 points. It would seem then that the intermingling began slowly but is proceeding at an accelerating pace as time goes on. This is the case in the Registration Area. When the case of the nine provinces over the eleven-year period is studied, it is found that the movement was not so rapid, proceeding from 10·03 in 1926 (as compared with 13·30 in the Registration Area) to 14·14 in 1936—only 4·11 points compared with 6·01 in the Registration Area. In Quebec in 1926 it was 4·07, moving up to 4·31 in 1936. Of course, this is readily explained by the fact that Quebec is mainly one race. In elaboration of the foregoing, Statement LXIII shows for specified races the number of births where (1) the mother is of stated origin, (2) both parents are of the same stated origin.

LXIII.—BIRTHS TO MOTHERS OF STATED ORIGIN AND TO PARENTS OF THE SAME STATED ORIGIN, BY SPECIFIED RACIAL ORIGIN, CANADA, 1926-1936

Racial Origin	Births 1926-36	
	To Mothers of Stated Origin	With Both Parents of Stated Origin
All races	2,544,737	2,160,427
British	1,038,775	897,697
English	567,117	368,985
Irish	220,693	96,876
Scottish	242,838	105,965
French	1,000,303	913,890
Belgian	6,520	3,757
Central and Eastern European	300,372	219,014
Chinese	2,910	2,437
Dutch	25,488	13,415
Hebrew	23,126	22,541
Indian	38,635	30,108
Italian	23,509	21,047
Japanese	8,276	8,166
Negro	4,897	3,581
Scandinavian	46,809	25,426

The statement refers to the accumulated births over the period 1926-36 in the nine provinces. It really shows that there is something more than the mere propensity to in-marriage in the proportions of births to the parents in the same origins, *e.g.*, the English show much greater proportions than the Irish or Scottish and there is little doubt that this is at least partly because there are more English women that (1) English men, (2) Irish or Scottish men, can marry; similarly with the French. It would be difficult for a French man in Quebec to marry a woman of origin other than French because the proportion of the latter to the former is small. It is, of course, different with the other races and from their point of view the propensity to in-marriage is understated instead of being overstated by the figures while probably it is very much overstated in the case of the English and the French. In Quebec in 1931 there were 504,011 men of French origin between the ages of 20 and 60; for the women there were, between the ages, say, of 15 and 50, of French origin, 557,630, of other origins, 162,223. Supposing that all these men wanted wives and had no choice in the matter of origin, 78 p.c. of the wives they chose would have to be French. If, however, the men of other racial origins showed propensity to pick out wives of the same race as themselves, the French would have to choose more than 78 p.c. of their wives from among the French women. These things have to be considered in interpreting the data of Statement LXIII.

FERTILITY RATES BY RACIAL ORIGIN

Specific Rates of Women of All Conjugal Conditions, 1930-1932.—Statement LXIV presents the specific fertility rates and the total fertility rates of women of all conjugal conditions in Canada for the different races for the average of the three years 1930-32. This period centres around the Census of 1931.

LXIV.—SPECIFIC FERTILITY RATES[1] OF WOMEN 15-49 YEARS OF AGE OF ALL CONJUGAL CONDITIONS, BY AGE AND RACIAL ORIGIN OF MOTHER, WITH TOTAL FERTILITY RATES[2], BY RACIAL ORIGIN OF MOTHER, CANADA, 1930-1932

Racial Origin of Mother	Specific Fertility Rates for Mothers in Age Group							Total Fertility Rate
	15-10	20-24	25-29	30-34	35-39	40-44	45-49	
All races	29·5	136·7	174·4	144·9	103·2	44·8	5·3	3·10
British	28·7	115·4	136·5	108·1	70·1	27·3	2·7	2·44
English	33·4	127·3	143·3	107·1	68·2	26·4	2·8	2·54
Irish	24·2	102·9	128·8	112·9	74·8	30·2	2·5	2·38
Scottish	23·4	103·4	130·5	107·0	70·6	26·8	2·6	2·32
French	26·9	157·9	233·0	218·0	178·8	87·2	11·3	4·57
Belgian	33·3	143·4	156·4	112·0	83·6	35·0	6·3	2·85
Central and Eastern European	36·4	169·2	190·0	150·8	109·0	51·5	8·3	3·57
Austrian	22·9	128·4	159·0	133·6	105·2	59·5	7·5	3·08
Bulgarian	42·3	216·7	93·0	87·0	45·5	-	-	2·42
Czech and Slovak	45·5	184·8	218·8	164·5	131·0	35·0	8·6	3·95
Finnish	38·9	110·3	97·9	71·0	46·6	24·1	4·3	1·07
German	33·6	164·0	193·1	149·3	110·5	53·9	6·6	3·55
Greek	17·9	134·8	241·1	122·4	90·5	42·4	20·0	3·35
Hungarian	64·7	222·3	218·3	159·4	119·9	54·1	10·9	4·25
Polish	34·0	152·2	186·6	145·2	100·3	44·2	9·6	3·36
Roumanian	37·5	157·2	168·0	129·3	86·3	45·9	4·9	3·15
Russian	23·3	115·4	141·1	151·6	112·0	50·3	9·0	3·01
Serb and Croat	78·5	286·7	290·4	214·0	167·3	51·1	8·9	5·48
Ukrainian	45·3	226·9	226·6	186·6	123·7	58·5	13·5	4·41
Chinese	35·7	206·5	235·0	222·2	210·0	97·6	34·8	5·21
Dutch	21·5	108·9	137·6	107·0	76·5	35·7	3·9	2·46
Hebrew	4·3	59·3	108·1	80·6	39·3	0·9	0·7	1·51
Indian	70·8	204·8	199·6	173·7	143·7	72·0	16·3	4·45
Italian	34·2	173·8	195·5	159·9	123·8	55·5	8·3	3·75
Japanese	33·2	284·6	297·1	217·9	158·6	78·7	10·6	5·40
Negro	58·2	137·2	153·0	101·5	80·8	36·6	4·3	2·86
Scandinavian	27·6	136·6	162·2	123·9	93·0	41·8	5·6	2·95
Danish	28·4	135·2	157·1	117·5	78·4	35·1	1·8	2·77
Icelandic	16·1	109·7	145·1	124·6	92·2	49·3	6·9	2·72
Norwegian	29·5	150·4	175·3	134·3	106·3	47·2	6·7	3·25
Swedish	27·8	128·5	154·4	114·4	83·3	35·5	5·8	2·75

[1] Rates per 1,000 women of age and race specified.
[2] For method of calculation, see page 284.

Looking at the specific fertility rates for the chief racial origins, it will be observed that the rates for the British are below average in each age group. Individually, English are the lowest in the age groups 35-39 and 40-44, Irish in the groups 20-24, 25-29 and 45-49 while Scottish are lowest in the groups 15-19 and 30-34.

The specific fertility rates for French are higher than "all races" in every group except the 15-19 group. Dutch rates are all quite low, though in no case do they reach the extreme. Among the races showing the highest rates are Japanese, Chinese, Italian and Indian. In the group 15-19 Indian shows the highest rate, 79·8. In the four oldest age groups Chinese show the highest rates with 222·2, 210·0, 97·6 and 34·8. Hebrew show extremely low rates; they are the lowest of all races in the 15-19 group with 4·3, in the 20-24 group with 59·3 and in the 35-39 group with 39·3.

Considering the Scandinavian group as a whole, in all the age groups the specific rates are closer to the average than any other group or individual race.

Central and Eastern European, including several races which vary irregularly from the average in the different age groups, show rates higher than average in each age group. In the age group 15-19 the rate is 36·4; in the groups 20-24 and 25-29, 169·2 and 190·0. Among the twelve races in this racial grouping Serbs and Croats show the highest rates in these two age groups. Ukrainian are highest in the oldest age group and Austrian highest in the 40-44 group. In all age groups the Germans are slightly better than average.

Total Fertility Rates.—The total fertility rates have been computed from the specific fertility rates and range from a high of 5·48 for Serbs and Croats to a low of 1·51 for Hebrew. The total fertility for all races is 3·19.

In the different racial groups shown, British and Scandinavian are below average with 2·44 and 2·95, respectively, and Central and Eastern European somewhat higher with 3·57. Origins

with rates very much higher than average are Serbs and Croats, 5·48; Japanese, 5·40; Chinese, 5·21; French, 4·57; Indian, 4·45; Ukrainian, 4·41; Hungarian, 4·25. Finnish has a rate of 1·97 which is very low though somewhat higher than Hebrew, the lowest as already mentioned.

Fertility Rates within Marriage.—Such rates as have already been used in this chapter were based upon the total population and as such do not fully measure the true fertility of the different origins. For the purpose it is necessary to consider the rates within marriage, taking into consideration the age composition of married women. Table 11, Part III, page 355, shows for the three years 1930-32 the number of births by age of (married) mother to the different races in the nine provinces; also the number of married women at ages 15-49 in 1931. Based upon the specific fertility obtained in this table, Statement LXV shows the total rates obtained when these specific rates are applied to the standard population of married females*. It will be seen that the highest thus computed is for French, 242·55; the next highest was for Chinese and Japanese, 201·31. The lowest is Hebrew, 84·41, a little lower than the Finnish, 93·70. The British with 128·88 occupy eleventh place in eighteen origins, *i.e.*, is somewhat less than average. There is no marked racial grouping in these rates, *i.e.*, the Ukrainians are high and the Russians are low; the Italians are high and the Roumanians are low; the Germans are high and the Austrians are low; the Scandinavians are a good average but the Dutch and Belgians are quite low. A great deal of this is doubtless due to confusion in reporting race.

LXV.—TOTAL FERTILITY RATES FOR THE CHILD-BEARING AGES, BY RACIAL ORIGIN OF MOTHER, BASED ON STANDARD POPULATION OF MARRIED FEMALES, CANADA, 1930-1932

Racial Origin of Mother	Standardized Total Fertility Rate (per 1,000)
British	128·88
French	242·55
Austrian	121·35
Belgian	122·66
Chinese and Japanese	201·31
Czech and Slovak	150·63
Dutch	115·81
Finnish	93·70
German	163.06
Hebrew	84·41
Hungarian	153·14
Indian	155·66
Italian	152·91
Polish	130·45
Roumanian	113·38
Russian	121·00
Scandinavian	137·09
Ukrainian	162·20

Specific Fertility in the Prairie Provinces, 1926, 1931 and 1936.—The probable confusion in reporting races which interfered with the interpretation of the fertility rates of the nine provinces is largely avoided in data compiled for the Prairie Provinces for 1926, 1931 and 1936. As these provinces contain a very large proportion of the different races other than French, the data are consequently fairly representative of Canada as a whole, except for the British and French. Table 12, Part III, page 355, shows the specific fertility rates during these years by age of mother. Statement LXVI shows a computation of the total fertility, *i.e.*, the number of children of both sexes expected to be born to a mother in passing through the child-bearing period as based upon the rates shown in Table 12.

* As of Canada, 1931.

LXVI.—TOTAL FERTILITY RATES[1] OF WOMEN OF ALL CONJUGAL CONDITIONS, BY RACIAL ORIGIN OF MOTHER, PRAIRIE PROVINCES, 1926, 1931 AND 1936

Racial Origin of Mother	1926	1931	1936
All races	3·54	3·24	2·71
British	2·88	2·54	2·08
English	2·93	2·59	2·00
Irish	2·75	2·50	2·21
Scottish	2·89	2·51	2·10
French	4·38	4·05	3·67
Belgian	3·99	3·29	3·54
Central and Eastern European	5·00	4·20	3·33
Austrian	4·83	3·62	3·43
Bulgarian	2·80	1·25	1·71
Czech and Slovak	4·20	3·68	3·18
Finnish	4·06	3·01	3·05
German	5·02	4·70	3·41
Greek	4·24	3·16	2·41
Hungarian	4·11	4·65	3·71
Polish	3·97	3·49	2·93
Roumanian	5·71	3·66	3·03
Russian	3·64	3·20	3·45
Serb and Croat	6·73	6·91	4·94
Ukrainian	5·14	4·63	3·34
Chinese	11·59	6·12	4·50
Dutch	2·73	3·41	3·74
Hebrew	2·55	1·59	1·23
Indian	4·41	5·97	8·71
Italian	3·87	2·94	1·88
Japanese	6·74	5·67	5·51
Negro	2·68	1·79	3·38
Scandinavian	3·51	3·12	2·77
Danish	3·22	3·03	2·79
Icelandic	3·00	2·78	2·48
Norwegian	3·86	3·44	2·93
Swedish	3·38	2·83	2·65

[1] For method of calculation, see page 384.

In 1926 the highest total fertility was shown by Chinese with 11·59, Japanese with 6·74 and Serbs and Croats with 6·73; the lowest was shown by the Hebrews with 2·55, Negroes with 2·68 and Dutch with 2·73. The British showed 2·9.

In 1931 the Serbs and Croats were highest with 6·91, the Chinese next with 6·12 and the Indian third with 5·97; the lowest were the Bulgarians with 1·25 and the Hebrew with 1·59. The British rate was 2·54.

In 1936 the Indian race was highest with 8·71, the Japanese and Serbs and Croats next with 5·51 and 4·94, respectively; the lowest were the Hebrew with 1·23 and the Bulgarians with 1·71. The British were fourth lowest with 2·08.

It should be mentioned that in all cases several races have rates based upon very small numbers. These are the Bulgarians, Chinese, Greeks, Japanese, Negroes and Serbs and Croats.

The figures show remarkable differential changes, sufficient to convince us that it is impossible to envisage the future distribution of races in Canada.

Miscellaneous Phases of Racial Fertility.—A monograph, *Racial Origins and Nativity of the Canadian People*, by Professor W. B. Hurd, contains a chapter on intermarriage of races (Chapter VII). This chapter goes into the matter in a great deal more detail than do the foregoing paragraphs, especially into comparisons between the sexes of individual races and race groups. Some of the conclusions are as follows:—

"Colour and the cultural differences associated therewith again appear as the greatest of all barriers to intermarriage. The parentage of children born in 1931 indicates that some 92·2 p.c. of the males and 96·2 p.c. of the females in the average coloured race were married to persons of the same origin, as against 93·8 p.c. and 94·7 p.c. in 1921, the percentages in both cases being based on figures for the Chinese, Japanese, Negroes and Indians." This trend in coloured races between 1921 and 1931 is quite different from the trend noticed above in the case of all races.

"The high proportion of endogamous marriages for the women of Latin and Greek origin is still an outstanding characteristic of the figures." Perhaps the most important phase discussed

in the monograph that has not already been commented on in this chapter is the extent of intermarriage as between other races and the two basic stocks of Canada. Statement LXII above reflects increasing intermarriage but does not indicate whether this is between allied stocks or foreign stocks and native stocks. Professor Hurd concludes that "after making all reasonable allowance . . . . it still seems apparent that many of the ingredients in Canada's 'melting pot' have as yet scarcely begun to dissolve in so far as intermarriage with the basic Anglo-Saxon stocks is a criterion." He also notes that those who have married least with the British have married to the greatest extent with the French and vice versa. By making certain measurements he ascertains that the factors in the way of intermarriage, are in order of importance: (1) segregation (geographical); (2) short duration of residence; (3) size of group; (4) percentage rural (probably another phase of segregation; Professor Hurd uses percentage urban which he finds favourable to intermarriage), and (5) surplus males, the last mentioned being very unimportant *per se*. External factors influence males to a much greater extent than females and, strangely enough, percentage urban seems to be unfavourable to female intermarriage. Furthermore, such external factors as have been examined affect different races quite differently.

As regards intermarriage of foreign stocks with British races, length of residence seems to be the greatest determinant. On the whole, however, most of the external factors seem to be concomitant and probably merely incidental to another factor more important than all, *viz.*, religion.

CONCLUSIONS

Two important points seem to have been brought to light in the study of the trend of births by racial origins: (1) one and all have shared in a general decline and owing to the difference in the time over which this decline has been operating for different races, no one can say whether it is proceeding faster for one race than another. (2) The births really indicate an increasing trend in the intermingling of races. This may not be an intermingling of foreign races with the dominant stocks but probably is none the less important for all that. If foreign races mingle with one another in a new country where they have failed to do so in an old the situation is hopeful. Moreover, racial ideologies in matters political are apt to be toned down in proportion as this process advances.

CHAPTER VI

DIFFERENCES IN FERTILITY ACCORDING TO BIRTHPLACE OF PARENTS

Introduction.—The objectives of a study of births, birth rates and other phases of fertility according to the birthplace of parents are necessarily different from those of a study according to racial origin. In the latter it is concerned chiefly with the contribution to our population made by different stocks, the rates at which these contributions proceed and, chiefly, the extent to which the different stocks are intermingling. In the case of birthplace of parents these phases seem to be only of secondary importance, *e.g.*, it is not particularly valuable to known how much Russia is contributing to our population as people from Russia may be Russians, Germans, Hebrews, etc. These people differ in race, religion, education and probably somewhat even in customs. What seems to be the phase of chief importance to Canada arises from the fact that the great part of the country and the largest cities are populated largely by people who have changed their habitat—have moved and are still moving. This motion brings about an interchange of peoples and provides opportunity to persons born many miles apart to meet and marry. This certainly is a very different situation from that in which a stationary people marry among themselves. Interchange of culture, ideas and ideals must have important influences upon the progeny. If one parent of a child born in British Columbia was raised in Alberta, the other in Prince Edward Island and he himself lives to manhood in British Columbia, this should provide that child with an opportunity to know both his own province and the rest of the Dominion better than if both his parents had been born in British Columbia. At any rate, whether for good or bad, the influences should be different. It would be, of course, interesting to know in addition the comparative rates at which people from different countries are reproducing—for scientific purposes as well as for general interest. This is far more difficult to measure statistically than data on race because we do not know in how many places the parents have lived in the interval between their own birth and the birth of their children. It is also important, at least as a matter of scientific interest, to obtain for the data on births the extent to which intermarriage is influenced by proximity of residence, *e.g.*, is a woman who has been brought up in a certain locality more apt to marry a man brought up (1) in that locality, (2) in other parts of that province, (3) in a neighbouring province or (4) elsewhere? Do the groups of people living on either side of the United States border or of the border of two provinces intermarry or, with such opportunities for becoming acquainted, are there barriers political or cultural? It is impossible to do this thoroughly and it would be a big study in itself but some attention will be paid to the trend of births to parents both born in the same province compared with births to parents born in different provinces. An illustration of one of the phases of such a study may be useful. Taking Alberta which of all the provinces in 1931 had the smallest proportion of persons over 20 years of age born in the province, it is interesting to know from year to year the number of births to mothers born in Alberta, where the father was born either in (1) Alberta, (2) British Columbia or Saskatchewan, (3) elsewhere in Canada, (4) in the United States or (5) elsewhere.

In Alberta in 1926 there were 14,052 births. Of these, 2,330 had mothers born in that province and 776 had both parents born in Alberta. In 1936 there were 15,179 births in Alberta of which 6,208 had mothers Alberta-born and 2,682 had both parents Alberta-born, *i.e.*, in 1926, 16·6 p.c. of mothers and 5·5 p.c. of both parents were born in Alberta. These proportions had risen in 1936 to 40·9 p.c. of the mothers and 17·7 p.c. of both parents born in that province. Statement LXVII shows these features for the three Prairie Provinces for the years 1926 to 1936 as well as the same data for children born in any of the nine provinces of Canada whose mother had been born in one of the Prairie Provinces.

LXVII.—TOTAL CHILDREN BORN IN PROVINCE AND YEARLY BIRTHS IN CANADA AND PROVINCES TO MOTHERS BORN IN PROVINCE, BY BIRTHPLACE OF FATHER, PRAIRIE PROVINCES, 1926-1936

Province and Year	No. of Children Born in Province	Yearly Births in Canada to Mothers Born in Province						Yearly Births in Province to Mothers Born in Province					
		Total	Father Born in Province	Father Born in Adjacent Province	Father Born Elsewhere in Canada	Father Born in the United States	Father Born Elsewhere in World	Total	Father Born in Province	Father Born in Adjacent Province	Father Born Elsewhere in Canada	Father Born in the United States	Father Born Elsewhere in World
Manitoba—													
1926	14,195	8,132	3,422	1,349	531	514	2,316	5,327	2,779	599	238	203	1,508
1927	13,674	8,449	3,567	1,328	538	550	2,466	5,517	2,944	574	216	245	1,538
1928	13,995	8,893	3,761	1,417	581	592	2,547	5,769	3,110	565	229	235	1,630
1929	13,718	9,128	4,010	1,342	557	629	2,590	5,916	3,335	500	198	267	1,616
1930	13,871	9,569	4,289	1,388	591	591	2,710	6,270	3,552	541	213	238	1,726
1931	13,863	9,674	4,412	1,361	559	622	2,720	6,553	3,815	532	218	253	1,735
1932	13,621	10,121	4,724	1,442	584	574	2,797	6,922	4,100	565	189	250	1,818
1933	12,801	9,839	4,733	1,357	501	551	2,697	6,832	4,165	493	170	233	1,771
1934	12,798	10,325	5,116	1,391	585	528	2,705	7,312	4,551	526	199	243	1,793
1935	12,862	10,724	5,386	1,487	563	552	2,736	7,610	4,811	542	206	241	1,810
1936	12,362	10,797	5,590	1,478	586	526	2,617	7,607	5,016	525	186	225	1,655
Saskatchewan—													
1926	20,326	3,890	1,067	368	690	433	1,332	3,185	1,024	250	445	366	1,100
1927	20,583	4,430	1,218	403	780	479	1,550	3,609	1,171	260	502	398	1,278
1928	20,798	5,014	1,355	511	850	585	1,713	4,029	1,300	333	535	478	1,383
1929	20,906	5,775	1,655	571	1,003	645	1,901	4,690	1,583	394	627	533	1,553
1930	21,432	6,559	1,952	681	1,016	736	2,174	5,264	1,858	430	623	590	1,763
1931	20,693	7,079	2,162	785	1,098	813	2,221	5,689	2,056	499	698	664	1,772
1932	20,162	8,007	2,547	854	1,237	879	2,490	6,376	2,430	513	754	723	1,956
1933	19,499	8,587	2,867	909	1,218	972	2,621	6,842	2,702	543	725	821	2,051
1934	19,086	9,571	3,331	1,071	1,359	1,028	2,782	7,545	3,128	626	797	844	2,150
1935	18,929	10,563	3,946	1,150	1,476	1,096	2,895	8,249	3,718	634	798	869	2,230
1936	18,422	11,344	4,339	1,337	1,561	1,134	2,973	8,669	4,018	683	791	916	2,261
Alberta—													
1926	14,052	2,692	786	74	469	427	936	2,330	776	26	321	383	824
1927	14,479	2,966	900	98	555	468	945	2,546	884	32	400	413	817
1928	15,214	3,292	999	99	569	583	1,042	2,844	973	40	419	530	882
1929	16,387	3,979	1,248	154	702	666	1,209	3,408	1,212	72	494	589	1,041
1930	17,092	4,421	1,422	161	784	696	1,358	3,790	1,383	72	556	623	1,156
1931	16,617	4,770	1,538	200	842	742	1,448	4,085	1,502	89	604	670	1,220
1932	16,385	5,045	1,689	252	848	752	1,504	4,277	1,627	102	597	664	1,287
1933	15,500	5,509	1,891	286	861	838	1,633	4,674	1,827	122	601	749	1,375
1934	15,647	6,237	2,248	360	983	877	1,769	5,309	2,175	176	673	777	1,508
1935	15,569	6,940	2,546	409	1,136	896	1,953	5,822	2,446	196	747	797	1,636
1936	15,179	7,463	2,789	587	1,162	931	1,994	6,208	2,682	274	760	829	1,663

Trend in Births by Birthplace of Mother, Registration Area, 1921-1936, and Crude Rates, 1921-1922 and 1931-1932.—Statement LXIX shows, for the Registration Area, the number and index (based on 1921) of live births by birthplace of mother with crude rates for the average of 1921-22 and 1931-32. We might mention here that this statement could have been made using birthplace of father but, as birth certificates of illegitimate children show only birthplace of mother, the method we chose gives about 4 p.c. more complete information. One interesting feature of this is summarized in Statement LXVIII, *viz.*, that though the number of births to Canadian-born mothers fluctuated year by year over the period they formed a steadily increasing proportion of total births. In 1921 they formed 56·5 p.c. of the births and in 1936, 75·0 p.c. Births to British-born mothers showed an opposite tendency; from 21·7 p.e. in 1921 they fell yearly until they contributed only 10·2 p.e. in 1936. This was likewise true of births to foreign-born mothers though the decrease was neither steady nor as great, from 20·1 p.e. in 1921 to 14·7 p.c. in 1936.

LXVIII.—PERCENTAGE DISTRIBUTION OF MOTHERS, BY BIRTHPLACE, REGISTRATION AREA, 1921-1936, AND CANADA AND QUEBEC, 1926-1936

Year	All Birthplaces	Canada	British Isles and Possessions	United States	Other Countries	Not Stated
Registration Area—						
1921	100·0	56·5	21·7	7·5	12·6	1·7
1922	100·0	57·5	20·9	7·5	12·6	1·5
1923	100·0	59·0	20·2	7·4	12·7	0·7
1924	100·0	59·9	19·6	7·4	12·7	0·4
1925	100·0	60·7	19·2	7·3	12·6	0·2
1926	100·0	61·3	18·6	7·2	12·7	0·2
1927	100·0	61·8	18·1	7·0	12·9	0·2
1928	100·0	61·8	17·8	7·0	13·2	0·2
1929	100·0	62·1	17·2	6·8	13·6	0·3
1930	100·0	62·3	16·8	6·5	14·2	0·2
1931	100·0	63·9	15·5	6·3	14·1	0·2
1932	100·0	66·0	14·4	6·2	13·3	0·1
1933	100·0	68·3	13·3	6·1	12·3	–
1934	100·0	70·7	12·1	5·7	11·3	0·2
1935	100·0	72·9	11·1	5·4	10·5	0·1
1936	100·0	75·0	10·2	5·3	9·4	0·1
Canada—						
1926	100·0	71·8	13·0	5·8	9·0	0·4
1927	100·0	72·2	12·6	5·6	9·0	0·6
1928	100·0	72·2	12·4	5·5	9·3	0·6
1929	100·0	72·4	12·2	5·1	9·7	0·6
1930	100·0	72·4	12·0	4·9	10·1	0·6
1931	100·0	73·7	11·0	4·7	10·0	0·6
1932	100·0	75·3	10·2	4·6	9·4	0·5
1933	100·0	76·7	9·5	4·5	8·8	0·5
1934	100·0	78·5	8·6	4·2	8·2	0·5
1935	100·0	80·0	8·0	4·0	7·5	0·5
1936	100·0	81·6	7·3	3·9	6·8	0·4
Quebec—						
1926	100·0	91·0	2·8	3·0	2·2	1·0
1927	100·0	91·2	2·6	3·0	1·9	1·3
1928	100·0	91·4	2·5	2·8	2·0	1·3
1929	100·0	92·0	2·6	1·9	2·1	1·4
1930	100·0	91·7	2·7	1·8	2·3	1·5
1931	100·0	92·0	2·6	1·8	2·2	1·4
1932	100·0	92·7	2·4	1·6	2·3	1·0
1933	100·0	92·8	2·3	1·5	2·2	1·2
1934	100·0	93·1	2·1	1·3	2·2	1·3
1935	100·0	93·7	1·9	1·3	1·9	1·2
1936	100·0	94·1	1·8	1·2	1·7	1·2

Of the 168,979 children born in 1921 in the Registration Area, Canadian-born mothers were the largest contributors with 95,549 children, British-born second with 36,619 and United States-born next with 12,668 children. Mothers born in Russia, Austria and Poland were next in importance, each group contributing around 4,000. Italian-born mothers accounted for 1,672. Going down the scale we have the following numbers of children with corresponding birthplace of mother: Sweden, 838; Norway, 754; Germany, 631; Japan, 591; France, 555; Belgium, 507; Hungary, 409; Finland, 377; and China, 301.

LXIX.—NUMBER AND INDEX (BASED ON 1921) OF LIVE BIRTHS, BY BIRTHPLACE OF MOTHER, REGISTRATION AREA, 1921-1936, WITH CRUDE BIRTH RATES FOR THE AVERAGE OF 1921-1922 AND OF 1931-1932

Year	All Birth places	Canada	British Isles and British Possessions	Austria	Belgium	Denmark	Finland	France	Germany	Holland	Hungary	Italy	Norway	Poland[1]	Roumania	Russia[2]	Sweden	China	Japan	United States
BIRTHS																				
1921	168,979	95,549	36,619	4,130	507	183	377	555	631	251	409	1,672	754	3,931	[3]	4,338	838	301	591	12,668
1922	164,194	94,475	34,236	3,625	465	180	360	488	585	[3]	405	1,604	682	4,060	[3]	3,706	749	312	613	12,379
1923	156,897	92,598	31,677	3,357	429	185	349	446	537	[3]	370	1,639	629	3,957	[3]	3,522	721	349	686	11,610
1924	157,595	94,466	30,841	3,293	414	152	422	438	528	[3]	407	1,685	659	3,955	[3]	3,510	752	299	709	11,655
1925	154,861	94,043	29,781	3,113	401	179	477	392	562	[3]	387	1,604	638	3,751	[3]	3,538	670	301	743	11,251
1926	150,585	92,249	27,942	2,888	418	191	457	348	619	229	447	1,478	615	3,506	1,056	4,153	663	267	779	10,903
1927	151,124	93,443	27,391	2,640	460	225	514	361	650	240	544	1,502	672	3,562	937	4,348	600	245	799	10,579
1928	153,136	94,563	27,286	2,657	467	280	547	307	748	306	620	1,487	643	3,804	1,043	4,415	613	200	848	10,726
1929	154,035	95,608	26,531	2,583	462	342	598	330	847	308	783	1,324	680	4,355	916	4,415	600	205	854	10,440
1930	159,870	99,564	26,853	2,545	469	378	658	299	964	313	1,089	1,377	704	4,982	970	4,636	626	186	803	10,355
1931	156,867	100,280	24,249	2,295	421	344	638	242	1,014	296	1,030	1,236	672	5,507	886	4,331	577	165	781	9,897
1932	153,450	101,317	22,082	2,001	396	336	523	251	916	260	958	1,113	644	5,258	856	3,905	505	142	657	9,518
1933	145,948	99,616	19,344	1,766	340	303	480	213	809	252	825	921	535	4,601	719	3,554	439	125	580	8,843
1934	144,871	102,462	17,541	1,573	321	267	459	185	830	235	779	797	454	4,150	607	3,315	370	109	525	8,324
1935	146,184	106,531	16,263	1,356	329	242	426	174	800	229	717	805	396	3,895	543	3,099	363	95	433	7,920
1936	145,086	108,885	14,731	1,148	282	213	403	174	650	188	604	704	383	3,636	514	2,693	303	84	405	7,661
Crude birth rates[4]—																				
1921-22	53·89	41·16	77·69	174·49	104·09	83·64	77·93	88·45	57·37	113·41	124·25	194·46	86·80	151·69	[3]	100·39	84·40	267·49	179·00	80·08
1931-32	43·21	37·42	46·17	154·18	67·64	74·11	54·11	48·75	67·20	74·79	112·21	100·16	63·19	83·48	68·36	84·56	52·71	111·37	164·64	67·44
INDEX OF BIRTHS																				
1921	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	[3]	100·0	100·0	100·0	100·0	100·0
1922	97·2	98·9	93·5	87·8	91·7	98·4	95·5	87·9	92·7	[3]	99·0	95·9	90·5	103·3	[3]	85·4	89·4	103·7	103·7	97·7
1923	92·8	96·9	86·5	81·3	84·6	101·1	92·6	80·4	85·1	[3]	90·5	98·0	83·4	100·7	[3]	81·2	86·0	115·9	116·1	91·6
1924	93·3	98·9	84·2	79·7	81·7	83·1	111·9	78·9	83·7	[3]	99·5	100·8	87·4	100·6	[3]	80·9	89·7	99·3	120·0	92·0
1925	91·6	98·4	81·3	75·4	79·1	97·8	126·5	70·6	89·1	[3]	94·6	95·9	84·6	95·4	[3]	81·6	80·0	100·0	125·7	88·8
1926	89·1	96·5	76·3	69·9	82·4	104·4	121·2	62·7	98·1	91·2	109·3	88·4	81·6	89·2	100·0[5]	95·7	79·1	88·7	131·8	86·1
1927	89·4	97·8	74·8	63·9	90·7	123·0	136·3	65·0	103·0	95·6	133·0	89·8	89·1	90·6	88·7	100·2	71·6	81·4	135·2	83·5
1928	90·6	99·0	74·5	64·3	92·1	153·0	145·1	55·3	118·5	121·9	151·6	88·9	85·5	96·8	98·8	101·8	73·2	66·4	143·5	84·7
1929	91·2	100·1	72·5	62·5	91·1	186·9	158·6	59·5	134·2	122·7	191·4	79·2	90·2	110·8	86·7	101·8	71·6	68·1	144·5	82·4
1930	94·6	104·2	73·3	61·6	92·5	206·6	174·5	53·9	152·8	124·7	266·3	82·4	93·4	126·7	91·9	106·9	74·7	61·8	135·9	81·7
1931	92·8	105·0	66·2	55·6	83·0	188·0	169·2	43·6	160·7	117·9	251·8	73·9	89·1	140·1	83·9	99·8	68·9	54·8	132·1	78·1
1932	90·8	106·0	60·3	48·5	78·1	183·6	138·7	45·2	145·2	103·6	234·2	66·6	85·4	133·8	81·1	90·0	60·3	47·2	111·2	75·1
1933	86·4	104·3	52·8	42·8	67·1	165·6	127·3	38·4	128·2	100·4	201·7	55·1	71·0	117·0	68·1	81·9	52·4	41·5	98·1	69·8
1934	85·7	107·2	47·9	38·1	63·3	145·9	121·8	33·3	131·5	93·6	190·5	47·7	60·2	105·6	57·5	76·4	44·2	36·2	88·8	65·7
1935	86·5	111·5	44·4	32·8	64·9	132·2	113·0	31·4	126·8	91·2	175·3	48·1	52·5	99·1	51·4	71·4	43·3	31·6	73·3	62·5
1936	85·9	114·0	40·2	27·8	55·6	116·4	106·9	31·4	103·0	74·9	147·7	42·1	50·8	92·5	48·7	62·1	36·2	27·9	68·5	60·5

[1] Includes Galicia. [2] Includes Ukraine. [3] Figures not available. [4] See footnote 1 to Statement LVI. [5] Index based on 1926 figure as data for years 1921-25 not available.

In 1936 Canadian-born mothers contributed the main portion, 108,885 births; British-born mothers were still second with the diminished total of 14,731 births and United States-born mothers a low third, 7,661. Of the other foreign-born mothers, Poland, having the least percentage loss over the period, now precedes Russia and Austria.

Apart from births to Canadian-born mothers the general trend in the yearly number of births over the sixteen-year period was definitely upward to 1930 and 1931 and from then on showed a remarkable decrease. This corresponds, to a large extent, with the flow of immigration for the period. Hungary, beginning with 409 births in 1921, scarcely held its own till 1925, showed marked yearly increases from then to 1930 when it registered 1,089 and in the next five years declined to 604; Hungarian immigration for the first five-year period was 1,500, for the second, 26,000 and for the last five-year period, 4,700. German births were 631 in 1921, fell to 528 in 1924 and then rose to 1,014 in 1931 but in 1936 scarcely bettered their 1921 figure; there were 4,500 German immigrants in the first five-year period, 60,900 from 1926 to 1930 but in the last period only 10,000. Others that reached their peak in either 1930 or 1931 were Finland, Poland and Russia.

Statement LXIX shows also crude rates for the average of the years 1921-22 and 1931-32 computed on the female population for the various birthplaces. As the masculinity of the population from the different birthplaces varies greatly, it was felt that the rates computed on female population would give a truer picture of the fertility. The masculinity for 1931 varies from 103 males per 100 females in the Canadian-born population to 2,785 males per 100 females born in China. The latter is, of course, extreme and the next highest is for those born in Denmark, 251 males per 100 females.

The 1931-32 birth rate for German-born females is the only one showing an increase over 1921-22. No doubt this is partly due to misrepresentation of birthplace in the 1921 Census. The female population born in Austria, France and the United States are the only ones showing a decrease over the ten-year period. However, these three as well as the other birthplaces, with the above-mentioned exception of Germany, show decreased birth rates for 1931-32. The percentage decrease ranges from 8·0 in the case of Japanese-born females to 58·4 for those born in China. This seems quite plausible when one considers the diminishing of immigration and the ageing of the population.

In 1921-22 women born in China had a fertility rate of 267·49, women born in Italy, 194·46. Other birthplaces with high fertility rates were: Japan, 179·00; Austria, 174·49; Poland, 151·69; Hungary, 124·25; Belgium, 104·09. In 1931-32 women born in Japan had a fertility rate of 164·64; Austria, 154·18; Hungary, 112·21; China, 111·37; Italy, 100·16. Any comparison between the fertility rates for women of the various birthplaces would be fruitless because of the marked differences in the proportion of women 15-49 to all women. As in 1921 birthplace was not classified by sex and age, this figure can only be obtained for the population of 1931 and is shown in Statement LXX.

Considering the foreign born we find that in 1931 the percentage of women 15-49 to all women was 88·9 for women born in Japan, 82·0 for Finland, 78·0 for Italy, 77·8 for China and 75·2 for Austria. This proportion dropped through the different birthplaces to 62·3 p.c. for Sweden and 57·4 p.c. for Germany.

It will be seen that the fertility rates of Canadian-born women are low. However, a comparison of the fertility rates both of the Canadian born and of the population as a whole with the fertility rates of immigrants is unsound owing to an unusual factor which has nothing to do with true fertility rates. Children born to other than Canadian-born mothers would automatically appear in the denominator of the equation for the Canadian fertility rate and the higher

LXX.—PERCENTAGE FEMALES 15-49 YEARS OF AGE FORM OF ALL FEMALES, BY BIRTHPLACE, REGISTRATION AREA, CANADA AND QUEBEC, 1931

Birthplace	P.C. of All Females in the Age Group 15-49 Years		
	Registration Area	Canada	Quebec
All birthplaces	51·8	51·4	50·4
Canada	46·2	47·0	48·6
British Isles and Possessions	66·4	66·7	69·0
Austria	75·2	75·6	79·8
Belgium	73·0	72·5	70·3
Denmark	68·3	69·9	84·9
Finland	82·0	83·1	93·1
France	64·9	63·8	61·7
Germany	57·4	58·2	69·4
Holland	68·2	68·3	70·4
Hungary	69·8	70·3	74·8
Italy	78·0	76·9	73·3
Norway	62·6	63·1	81·4
Poland	74·0	74·4	79·0
Roumania	74·0	74·1	74·6
Russia	69·9	70·7	74·8
Sweden	62·3	62·5	69·0
China	77·8	77·6	75·0
Japan	88·9	88·9	42·9
United States	71·2	70·8	68·7

the fertility rate for foreign-born females the lower the fertility rates for Canadian-born would appear. In 1921-22 the fertility rate for Canadian-born females was 41·16 and in 1931-32, 37·42. The proportion of Canadian-born women 15-49 to all women was 46·2 p.c. for 1931.

Trend in Births, by Birthplace of Mother, Canada, 1926-1936, and Crude Rates, 1931-1932.—Statement LXXI gives for Canada, 1926-36, the same set of figures as Statement LXIX gives for the Registration Area. Births to Canadian-born women in 1926 formed 71·8 p.c. of the total births and with slight yearly increases this proportion rose to 81·6 p.c. in 1936. While the absolute figures for all birthplaces fell from 232,750 at the beginning of the period to 220,371 at the end, the births to Canadian-born mothers rose from 166,999 to 179,757. Births to British-born females contributed 13·0 p.c. in 1926 and then decreased gradually, reaching 7·3 p.c. in 1936. Foreign-born had a larger percentage at both the beginning and end of the period than that of British-born and decreased only 31·6 p.c. while British-born decreased 46·9 p.c. over the whole period.

Births to females born in Denmark increased in the first four years of the period but then gradually declined until 1936 when there were 230, a number slightly higher than in 1926. Other birthplaces showing increased numbers in 1936 were Germany, Hungary and Poland. As in the case of the Registration Area, several countries showed increases up to the period 1930-31 and every birthplace showed a decline from that period on to the end of the decade.

Japan with the favourable proportion of its women between the ages 15 and 49, 88·9 p.c., had a birth rate of 164·37. The proportion of women 15-49 to all women born in Austria was also high; the country does not rank next to Japan, yet we find their fertility rate next in size, 143·40. Other countries whose favourable proportion of women in the child-bearing ages was reflected in high fertility rates were Hungary, China, Italy and Poland. Their rates were 111·53, 107·42, 98·19 and 82·30, respectively. Finland, second only to Japan with 83·1 p.c. of all women in the age group 15-49, had this advantage offset by having only 63·5 p.c. of all women married. The birth rate for Finland was 53·47. The only foreign-born women whose birth rate did not exceed that for all birthplaces were those born in France. Their rate, 39·80, was even lower than the rate for Canadian-born women. The rate for British-born, 45·31, was slightly higher than that for Canadian-born and about 4 p.c. less than that for all birthplaces.

LXXI.—NUMBER AND INDEX (BASED ON 1926) OF LIVE BIRTHS, BY BIRTHPLACE OF MOTHER, CANADA (NINE PROVINCES), 1926-1936, WITH CRUDE BIRTH RATES FOR THE AVERAGE OF 1931-1932.

Year	All Birthplaces	Canada	British Isles and British Possessions	Austria	Belgium	Denmark	Finland	France	Germany	Holland	Hungary	Italy	Norway	Poland	Roumania	Russia	Sweden	China	Japan	United States
BIRTHS																				
1926	232,750	166,999	30,230	2,938	472	193	471	464	635	239	460	1,946	618	3,714	1,192	4,620	666	273	779	13,394
1927	234,188	169,178	29,567	2,672	521	230	535	461	668	250	561	1,966	678	3,736	1,055	4,729	603	251	799	13,074
1928	236,757	171,027	29,367	2,701	541	286	564	392	764	319	659	1,948	653	3,996	1,151	4,788	617	205	848	13,036
1929	235,415	170,442	28,641	2,634	510	357	623	410	870	316	842	1,751	686	4,635	1,033	4,760	608	211	854	12,022
1930	243,495	176,235	29,144	2,580	515	396	704	386	998	324	1,209	1,766	721	5,297	1,111	4,939	635	191	803	11,873
1931	240,473	177,197	26,409	2,333	475	366	706	311	1,056	300	1,128	1,618	685	5,856	1,003	4,614	586	169	781	11,366
1932	235,666	177,556	24,032	2,030	445	359	572	315	966	269	1,075	1,398	658	5,683	998	4,193	513	147	657	10,842
1933	222,868	170,978	21,078	1,797	376	331	532	264	844	261	910	1,179	542	4,998	838	3,839	451	132	581	9,959
1934	221,303	173,647	19,137	1,603	356	291	509	236	870	241	864	1,045	462	4,485	713	3,641	376	113	526	9,349
1935	221,451	177,077	17,727	1,390	360	259	460	219	833	230	787	1,009	402	4,254	630	3,373	366	102	433	8,886
1936	220,371	179,757	16,060	1,182	307	230	428	217	678	190	673	868	394	3,987	585	2,968	307	89	406	8,531
Crude birth rates[1]— 1931-32	47·36	44·21	45·31	143·40	62·41	71·62	53·47	39·80	65·19	72·68	111·53	98·19	62·89	82·30	62·59	76·20	52·02	107·42	164·37	65·22
INDEX OF BIRTHS																				
1926	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
1927	100·6	101·3	97·8	90·9	110·4	119·2	113·6	99·4	105·2	104·6	122·0	101·0	109·7	100·6	88·5	102·4	90·5	91·9	102·6	97·6
1928	101·7	102·4	97·1	91·9	114·6	148·2	119·7	84·5	120·3	133·5	143·3	100·1	105·7	107·6	96·6	103·6	92·6	75·1	108·9	97·3
1929	101·1	102·1	94·7	89·7	108·1	185·0	132·3	88·4	137·0	132·2	183·0	90·0	111·0	124·8	86·7	103·0	91·3	77·3	109·6	89·8
1930	104·6	105·5	96·4	87·8	109·1	205·2	149·5	83·2	157·2	135·6	262·8	90·8	116·7	142·6	93·2	106·9	95·3	70·0	103·1	88·6
1931	103·3	106·1	87·4	79·4	100·6	189·6	149·9	67·0	166·3	125·5	245·2	83·1	110·8	157·7	84·1	99·9	88·0	61·9	100·3	84·9
1932	101·3	106·3	79·5	69·1	94·3	186·0	121·4	67·9	152·1	112·6	233·7	71·8	106·5	153·0	83·7	90·8	77·0	53·8	84·3	80·9
1933	95·8	102·4	69·7	61·2	79·7	171·5	113·0	56·9	132·9	109·2	197·8	60·6	87·7	134·6	70·3	83·1	67·7	48·4	74·6	74·4
1934	95·1	104·0	63·3	54·6	75·4	150·8	108·1	50·9	137·0	100·8	187·8	53·7	74·8	120·8	59·8	78·8	56·5	41·4	67·5	69·8
1935	95·1	106·0	58·6	47·3	76·3	134·2	97·7	47·2	131·2	96·2	171·1	51·8	65·0	114·5	52·9	73·0	55·0	37·4	55·6	66·3
1936	94·7	107·6	53·1	40·2	65·0	119·2	90·9	46·8	106·8	79·5	146·3	44·6	63·8	107·4	49·1	64·2	46·1	32·6	52·1	63·7

[1] See footnote 1 to Statement LVI.

Canadian-Born Mothers by Province of Birth.—Statement LXXII shows by the province of their birth the Canadian-born mothers appearing in the annual birth statistics. It is interesting to note that only three provinces, Prince Edward Island, Quebec and Ontario showed decreases between 1926 and 1936; Prince Edward Island had a small decrease of 68 births, Ontario, 561 and Quebec the largest decrease, 3,845. The other six provinces showed increases ranging from 217 births in New Brunswick to 7,935 in Saskatchewan. The increases in Saskatchewan and Alberta are especially noteworthy, the number of mothers born in these provinces having almost tripled over the period. In 1926 the mothers born in Saskatchewan numbered 4,087 and mothers born in Alberta, 2,853; ten years later these figures had changed to 12,022 for Saskatchewan and 7,922 for Alberta.

LXXII.—BIRTHS TO CANADIAN-BORN MOTHERS, BY PROVINCE OF BIRTH OF MOTHER, CANADA, 1926-1936

Year	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
1926.....	166,999	2,108	10,465	9,698	77,439	47,890	8,408	4,087	2,853	2,220
1027.....	169,178	2,036	10.546	9,825	78,668	48,001	8,758	4,658	3,182	2,292
1928.....	171,027	2,099	10,348	9,484	79,386	48,019	9,227	5,308	3,512	2,467
1929.....	170,442	1,954	10,152	9,401	78,051	47,046	9,511	6,113	4,215	2,700
1930.....	176,235	1,982	10,675	9,816	79,944	48,683	9,960	6,949	4,701	2,947
1931.....	177,197	2,103	10,815	9,861	80,053	48,253	10,098	7,536	5,104	2,745
1932.....	177,556	2,172	10,064	0,921	79,335	47,180	10,554	8,435	5,406	3,207
1933.....	170,978	2,112	10,470	9,299	74,095	46,097	10,293	9,121	5,927	3,279
1934.....	173,647	2,020	10,811	0,487	73,956	45,872	10,789	10,141	6,646	3,654
1935.....	177,077	2,098	10,910	0,849	73,354	47,029	11,152	11,143	7,385	3,879
1936.....	179,757	2,040	11,088	9,915	73,594	47,329	11,265	12,022	7,922	4,320

For the province of Quebec absolute figures for live births, 1926-36 with an index based on 1926 and crude rates for the average of 1931-32 are shown in Statement LXXIII.

Births to Canadian-born women comprised 91·0 p.c. of all births for the province while for Canada the percentage was only 71·8. However, over the decade this percentage increased by 10 in the case of Canada and by only 3 in Quebec. In 1926 British- and foreign-born females in Quebec contributed the small percentages of 2·8 and 5·2, respectively and the 1936 percentages were even smaller. United States-born females contributed a large proportion of the births to foreign-born, 2,491 of the 4,234 in 1936 and 870 of the 2,176 in 1936. Next to the United States-born females were those born in Italy, Russia and Poland with 468, 467 and 208 births respectively in 1926. In 1936 the order was changed to Poland 351, Russia 275 and Italy 164.

Contrary to what was found when considering the birth rates for Canada by birthplace of mother, in Quebec only 3 of the foreign birthplaces, Hungary, Italy and Poland, had rates higher than that for the Canadian born, 58·08. The rate for the United States-born was slightly lower, 53·07, and the rate for British-born, 37·42 was followed by Holland with 32·96, Russia with 31·41, Sweden with 28·16, Austria with 26·16 and France, the lowest, with 23·68.

Average Order of Birth by Birthplace.—Statement LXXIV, an extract from Table 13, Part III, page 360, shows the average number of children (1) born alive, (2) now living (*i.e.*, at date of report of latest birth), (3) born dead and (4) born alive or dead to mothers of stated birthplaces in 1930.

LXXIII.—NUMBER AND INDEX (BASED ON 1926) OF LIVE BIRTHS, BY BIRTHPLACE OF MOTHER, QUEBEC, 1926-1936, WITH CRUDE BIRTH RATES FOR THE AVERAGE OF 1931-1932

Year	All Birthplaces	Canada	British Isles and British Possessions	Austria	Belgium	Denmark	Finland	France	Germany	Holland	Hungary	Italy	Norway	Poland	Roumania	Russia	Sweden	China	Japan	United States
BIRTHS																				
1926	82,165	74,750	2,288	50	54	2	14	116	16	10	13	468	3	208	136	467	3	6	–	2,491
1927	83,064	75,735	2,176	32	61	5	21	100	18	10	17	464	6	174	118	381	3	6	–	2,495
1928	83,621	76,464	2,081	44	74	6	17	85	16	13	39	461	10	192	108	373	4	5	–	2,310
1929	81,380	74,834	2,110	51	48	15	25	80	23	8	59	427	6	280	117	345	8	6	–	1,582
1930	83,625	76,671	2,291	35	46	18	46	87	34	11	120	389	17	315	141	303	9	5	–	1,518
1931	83,606	76,917	2,160	38	54	22	68	69	42	4	98	382	13	349	117	283	9	4	–	1,469
1932	82,216	76,239	1,950	29	49	23	49	64	50	9	117	285	14	425	142	288	8	5	–	1,324
1933	76,920	71,362	1,734	31	36	28	52	51	35	9	85	258	7	397	119	285	12	7	1	1,116
1934	76,432	71,186	1,596	30	35	24	50	51	40	6	85	248	8	335	106	326	6	4	1	1,025
1935	75,267	70,546	1,464	34	31	17	34	45	33	1	70	204	6	359	87	274	3	7	–	966
1936	75,285	70,872	1,329	34	25	17	25	43	28	2	69	164	11	351	71	275	4	5	1	870
Crude birth rates[1]— 1931-32	57·75	58·08	37·42	26·16	38·70	47·48	47·82	23·68	40·04	32·96	105·59	91·83	50·83	68·91	39·94	31·41	28·16	48·62	–	53·07
INDEX OF BIRTHS																				
1926	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0		100·0
1927	101·1	101·3	95·1	64·0	113·0	250·0	150·0	86·2	112·5	100·0	130·8	99·1	200·0	83·7	86·8	81·6	100·0	100·0	–	100·2
1928	101·8	102·3	91·0	88·0	137·0	300·0	121·4	73·3	100·0	130·0	300·0	98·5	333·3	92·3	79·4	79·9	133·3	83·3	–	92·7
1929	99·0	100·1	92·2	102·0	88·9	750·0	178·6	69·0	143·8	80·0	453·8	91·2	200·0	134·6	86·0	73·9	266·7	100·0	–	63·5
1930	101·8	102·6	100·1	70·0	85·2	900·0	328·6	75·0	212·5	110·0	923·1	83·1	566·7	151·4	103·7	64·9	300·0	83·3	–	60·9
1931	101·8	102·9	94·4	76·0	100·0	1100·0	485·7	59·5	262·5	40·0	753·8	81·6	433·3	167·8	86·0	60·6	300·0	66·7	–	59·0
1932	100·1	102·0	85·2	58·0	90·7	1150·0	350·0	55·2	312·5	90·0	900·0	60·9	466·7	204·3	104·4	61·7	266·7	83·3	–	53·2
1933	93·6	95·5	75·8	62·0	66·7	1400·0	371·4	44·0	218·8	90·0	653·8	55·1	233·3	190·9	87·5	61·0	400·0	116·7	–	44·8
1934	93·0	95·2	69·8	60·0	64·8	1200·0	357·1	44·0	250·0	60·0	653·8	53·0	266·7	161·1	77·9	69·8	200·0	66·7	–	41·1
1935	91·6	94·4	64·0	68·0	57·4	850·0	242·9	38·8	206·3	10·0	538·5	43·6	200·0	172·6	64·0	58·7	100·0	116·7	–	38·8
1936	91·6	94·8	58·1	68·0	46·3	850·0	178·6	37·1	175·0	20·0	530·8	35·0	366·7	168·8	52·2	58·9	133·3	83·3	–	34·9

[1] See footnote 1 to Statement LVI.

LXXIV.—AVERAGE NUMBER OF CHILDREN (1) BORN ALIVE, (2) NOW LIVING, (3) BORN DEAD, (4) BORN ALIVE OR DEAD, BY BIRTHPLACE OF MOTHER, CANADA, 1930

Birthplace of Mother	Average Number of Children			
	Born Alive	Now Living	Born Dead	Born Alive or Dead
All birthplaces	3·92	3·47	0·10	4·02
Canada	4·08	3·57	0·10	4·18
Prince Edward Island	4·12	3·73	0·08	4·21
Nova Scotia	3·84	3·48	0·12	3·96
New Brunswick	4·40	3·82	0·11	4·50
Quebec	4·93	4·20	0·09	5·02
Ontario	3·24	2·98	0·12	3·35
Manitoba	3·25	2·96	0·10	3·34
Saskatchewan	2·71	2·44	0·06	2·78
Alberta	2·60	2·34	0·06	2·66
British Columbia	2·60	2·31	0·05	2·66
British Isles	3·00	2·79	0·11	3·10
England	3·11	2·89	0·11	3·21
Ireland	2·92	2·72	0·11	3·03
Scotland	2·76	2·58	0·10	2·87
Wales	3·06	2·79	0·11	3·17
British Possessions	3·74	3·32	0·12	3·86
Newfoundland	4·10	3·61	0·12	4·22
Europe	3·88	3·45	0·11	3·98
Austria	5·31	4·66	0·13	5·44
Belgium	3·25	2·94	0·09	3·34
Denmark	2·62	2·39	0·12	2·73
Finland	2·20	2·02	0·10	2·30
France	4·10	3·75	0·11	4·20
Germany	2·91	2·69	0·09	3·00
Holland	3·23	3·05	0·07	3·30
Hungary	3·50	3·02	0·09	3·60
Italy	4·09	3·60	0·13	4·22
Norway	3·40	3·20	0·10	3·50
Poland	3·61	3·22	0·10	3·71
Roumania	4·53	3·89	0·16	4·68
Russia	4·35	3·88	0·10	4·44
Sweden	3·68	3·41	0·08	3·76
Asia	3·96	3·68	0·07	4·03
China	5·10	4·85	0·04	5·13
Japan	3·65	3·43	0·07	3·72
United States	3·82	3·49	0·11	3·93

The average for children born alive ranges from 5·31 for mothers born in Austria to 2·20 for mothers born in Finland giving a rate of 3·92 for all birthplaces. Mothers born in China with an average of 5·10 children, in Quebec with 4·93, in Roumania with 4·53 and in the province of New Brunswick with 4·40 are among the highest. Alberta and British Columbia are quite low with 2·60; Denmark with 2·62, Saskatchewan with 2·71 and Scotland with 2·76 are next. For children now living, the order of birthplaces of mothers is practically the same as for children born alive except that China and Austria are interchanged; the highest average was 4·85, the lowest 2·02. The average number of children born dead for all birthplaces is 0·10. Below this we find five provinces of Canada, five countries of Europe and Asia as a whole, as well as China and Japan individually.

The averages in Statement LXXIV, adjusted for differences in age distribution of mothers, are shown in Statement LXXV.

LXXV.—AVERAGE NUMBER OF CHILDREN (1) BORN ALIVE, (2) NOW LIVING, (3) BORN DEAD, (4) BORN ALIVE OR DEAD, BY BIRTHPLACE OF MOTHER, ADJUSTED FOR DIFFERENCES IN AGE DISTRIBUTION OF MOTHERS, AND SHOWING THE PROPORTION OF CHILDREN NOW LIVING TO THOSE BORN ALIVE AND OF CHILDREN BORN DEAD TO THOSE BORN ALIVE OR DEAD, CANADA, 1930

Birthplace of Mother	Average Number of Children				Proportion of	
	Born Alive	Now Living	Born Dead	Born Alive or Dead	Children Now Living to Children Born Alive	Children Born Dead to Children Born Alive or Dead
All birthplaces	3·92	3·47	0·10	4·02	88·52	2·49
Canada	4·15	3·63	0·10	4·25	87·47	2·35
Prince Edward Island	3·79	3·44	0·08	3·87	90·77	2·07
Nova Scotia	3·92	3·55	0·12	4·04	90·56	2·97
New Brunswick	4·39	3·82	0·10	4·50	87·02	2·22
Quebec	4·69	4·00	0·08	4·78	85·29	1·67
Ontario	3·33	3·06	0·12	3·45	91·89	3·48
Manitoba	3·69	3·33	0·11	3·79	90·24	2·90
Saskatchewan	3·94	3·43	0·09	4·02	87·06	2·24
Alberta	3·87	3·35	0·08	3·95	86·56	2·03
British Columbia	3·28	2·83	0·06	3·34	86·28	1·80
British Isles	2·85	2·65	0·10	2·95	92·98	3·39
England	2·91	2·71	0·10	3·01	93·13	3·32
Ireland	2·79	2·60	0·11	2·90	93·19	3·79
Scotland	2·70	2·52	0·10	2·80	93·33	3·57
Wales	2·95	2·70	0·11	3·06	91·53	3·59
British Possessions	3·57	3·17	0·12	3·69	88·80	3·25
Newfoundland	3·87	3·41	0·11	3·98	88·11	2·76
Europe	3·73	3·33	0·10	3·83	89·28	2·61
Austria	4·66	4·10	0·11	4·77	87·98	2·31
Belgium	3·17	2·87	0·08	3·25	90·54	2·46
Denmark	2·73	2·49	0·11	2·85	91·21	3·86
Finland	2·47	2·24	0·11	2·59	90·69	4·25
France	3·66	3·37	0·09	3·75	92·08	2·40
Germany	2·99	2·77	0·09	3·09	92·64	2·91
Holland	3·16	2·99	0·07	3·23	94·62	2·17
Hungary	3·67	3·17	0·09	3·76	86·38	2·39
Italy	3·81	3·37	0·12	3·93	88·45	3·05
Norway	2·94	2·78	0·08	3·02	94·56	2·65
Poland	3·69	3·28	0·09	3·79	88·89	2·37
Roumania	4·30	3·70	0·15	4·46	86·05	3·36
Russia	3·98	3·56	0·09	4·07	89·45	2·21
Sweden	3·29	3·05	0·06	3·36	92·71	1·79
Asia	3·68	3·43	0·07	3·75	93·21	1·87
China	4·26	4·06	0·03	4·29	95·31	0·70
Japan	3·48	3·27	0·07	3·54	93·97	1·98
United States	3·80	3·47	0·11	3·90	91·32	2·82

The highest average for children born alive is for Quebec, 4·69 (Austria with 4·66 almost equals Quebec), and the lowest is Finland with 2·47. This is a considerably narrower range than the range for the unadjusted figures which was from 5·31 to 2·20. The adjusted averages for children now living show Austria highest with 4·10 and Finland lowest with 2·24. The proportion of children now living to children born alive ranges from 95 p.c. in the case of mothers born in China and Norway to 85 p.c. for those born in Quebec. This seems like a small range and suggests that there are no distinctive variations among birthplaces. The average number born dead ranges from 0·15 in the case of Roumania-born mothers to 0·03 in the case of China-born. The average number of births (born alive or dead) is highest for mothers born in Quebec, 4·78, and lowest for Finland, 2·59. The proportion of children born dead to children born alive or dead ranges from 4·25 for Finland to 0·70 for China. Other high proportions of children born

dead to all children born alive or dead are found for women born in Denmark, Ontario and the British Isles with 3·86, 3·48 and 3·39, respectively. This is perhaps contrary to expectation. On the other side of the picture we find these same birthplaces among those with higher percentages of children now living to children born alive.

The standard deviation for the average number of children born alive by individual countries of birth of mother was computed and found to be 0·58 in an average of 3·55. Compare this with the standard deviation of the average number of children born alive by racial origin of mother (page 299), 0·78 in an average of 3·57, which was considered not large. It would seem, therefore, that birthplace has no great influence on the fertility of the women of Canada. The standard deviation, of course, does not tell us definitely how much the average number of children born to a mother varies because of differences in birthplace, and without a standard with which to compare it does not tell us anything very definite. As standard deviations go, however, it seems low in itself. Furthermore, there are other features correlated with birthplace, *e.g.*, racial origin, religion and, to some extent, region, which would be responsible for some of this standard deviation. Consequently, it would seem that birthplace *per se* cannot be responsible for a significant differential in fertility as measured by average number of children, especially since the figures are adjusted for differences in age of mother.

Accumulated Births.—While trends in the number of births and crude and standardized rates are the customary methods by which the fertility of the population and the changes in fertility are presented, there is another point of view that should not be overlooked. Population is a very dynamic thing even when its dynamic properties are not accentuated by migration. The fact that older people are dying off and their place taken by younger people means that the population is continually changing its content. In 1931 out of a total of 10,359,165 persons with stated ages, 2,203,774 were under the age of 10 years, *i.e.*, born since the previous census, a proportion of one to four (neglecting the number under 10 years of age coming in through migration). If we take the Canadian-born population, there were 8,054,526 with stated ages and 2,119,703 under 10 years of age, *i.e.*, one born since the census to every three previously living. This impresses upon our minds the extent to which the content of our population is changing and that (except for the by-no-means-complete control of the old over the actions, thought and desires of the new) we have here a state of flux that is probably more important than any one other attribute of our population. The current births enable us to give a rough measurement of this flux and were it not for the complications caused by deaths and migration they would give us a perfect measurement of this and of the additions to our population. As it is, however, it may serve a useful purpose to cast up the accumulated births over a period of years (especially ten years to compare with an inter-censal period) to see how the accumulation for this period compares with the number 11 years and under at the censuses. In order to have a more definite picture we need a calculation of the survivors of these births but here it is impossible to be exact, especially when we are calculating survivors of different sections of the population. The expectations of a life table may be used for the population as a whole with fairly satisfactory results but when this is applied to races, birthplaces and so on we are apt to go far afield. Even so, a calculation of this nature serves a useful purpose so long as it is understood that it is only a rough estimate.

Statement LXXVI below shows the accumulated births over the period 1926-36 in the nine provinces with the survivors of these by age in 1936. The latter is obtained by using life table expectations. It is important to observe the comparison of these accumulated survivors with the accumulated natural increase of the whole population over the period by which we can estimate the change in personnel.

LXXVI.—TOTAL CHILDREN BORN, 1926-1936, AND PROBABLE SURVIVORS IN 1936, BY BIRTH PLACE OF MOTHER, CANADA

Birthplace of Mother	Total Children Born, 1926-36	Probable Survivors in 1936
All birthplaces	2,544,737	2,303,150
Canada	1,910,093	1,730,822
British Isles and Possessions	271,392	244,508
Austria	23,860	21,463
Belgium	4,878	4,398
Denmark	3,298	2,979
Finland	6,104	5,511
France	3,675	3,309
Germany	9,182	8,305
Holland	2,939	2,651
Hungary	9,168	8,293
Italy	16,494	14,843
Norway	6,499	5,859
Poland	50,641	45,813
Roumania	10,309	9,284
Russia	46,464	41,907
Sweden	5,728	5,155
China	1,883	1,692
Japan	7,467	6,724
United States	122,332	110,394

The statement shows that out of 2,303,150 estimated survivors of the children born from 1926 to 1936 Canadian-born mothers contributed 1,730,822 or 75·2 p.c.; British-born mothers contributed 244,508 or 10·6 p.c.; United States-born, 110,394 or 4·8 p.c.; Chinese- and Japanese-born, 8,416 or 0·4 p.c., and European-born, 179,770 or 7·8 p.c. Among the European countries, mothers born in Poland, Russia and Austria were the main contributors with 45,813, 41,907 and 21,463 births, respectively. The birthplace of the father should also be taken into consideration but some idea of the relationship of the two is given in the marriage statistics which show a general correspondence of birthplace of bride and groom, *e.g.*, in 1931 80 p.c. of the marriages gave both parties as being of the same birthplace.

The accumulated survivors of the births in Canada give us 2,303,150 at and under the age of 10 with a few at the age of 11. The accumulated natural increase of the population from 1926 to 1936 was 1,375,052. The accumulated survivors of the births over the period are, roughly, the number who have come into the population; the amount by which they exceed the natural increase is, roughly, the number who have gone out of the population by death or emigration. The two together represent the total change in the personnel, *viz.*, 3,678,202 or about one-third of the population.

Trend in Births Associated with Migration.—Statement LXXVII shows the births in Canada as a whole to (1) parents born in the same province as the child, (2) all other parents appearing in the births statistics of the given year as principals, for the purpose of showing the trend in the ratio of births associated with migration to other births. While the total births in the Registration Area at the end of the period 1921-36 showed a decided decrease from the total births at the beginning, the number of births where parents and child were all born in the same province showed a substantial gain, 7,762, so that the full decrease was in births associated with migration. The same is true for Canada over the period 1926-36 but in Quebec, while total births decreased by 8,924, the births where parents were born in the same province as the child also decreased some 2,229 and births associated with migration made up the remaining decrease, 6,065.

LXXVII.—TOTAL BIRTHS, BIRTHS TO PARENTS BORN IN THE SAME PROVINCE AS THE CHILD AND OTHER BIRTHS, WITH PROPORTION BIRTHS TO MIGRATING PARENTS FORM OF ALL BIRTHS, REGISTRATION AREA, 1921-1936, CANADA AND QUEBEC, 1926-1936

Year	Births			Proportion Births to Migrating Parents Form of Total Births (Col. 3 ÷ Col. 1) (4)
	Total (1)	Both Parents Born in Same Province as Child (2)	Other (3)	
Registration Area—				
1921	168,979	55,939	113,040	66·90
1922	160,823	55,541	105,282	65·46
1923	153,489	55,022	98,467	64·15
1924	153,880	56,051	97,829	63·57
1925	150,809	55,871	94,938	62·95
1926	145,519	54,535	90,984	62·52
1927	146,728	54,943	91,785	62·55
1928	148,275	55,006	93,269	62·90
1929	148,878	54,876	94,002	63·14
1930	154,330	57,587	96,743	62·69
1931	150,952	57,927	93,025	61·63
1932	147,423	58,797	88,626	60·12
1933	139,955	57,879	82,076	58·64
1934	139,136	59,905	79,231	56·95
1935	140,346	62,267	78,079	55·63
1936	138,922	63,601	75,321	54·22
Canada—				
1926	226,629	121,663	104,966	46·32
1927	227,473	123,170	104,303	45·85
1928	229,477	123,949	105,528	45·99
1929	227,899	123,068	104,831	46·00
1930	235,436	127,997	107,439	45·63
1931	232,108	128,676	103,432	44·56
1932	227,206	128,598	98,608	43·40
1933	214,442	123,310	91,132	42·50
1934	213,233	125,316	87,917	41·23
1935	213,107	126,677	86,430	40·56
1936	211,738	128,500	83,238	39·31
Quebec—				
1926	81,110	67,128	13,982	17·24
1927	80,745	68,227	12,518	15·50
1928	81,202	68,943	12,259	15·10
1929	79,021	68,192	10,829	13·70
1930	81,106	70,410	10,696	13·19
1931	81,156	70,749	10,402	12·82
1932	79,783	69,801	9,982	12·51
1933	74,487	65,431	9,056	12·16
1934	74,097	65,411	8,686	11·72
1935	72,761	64,410	8,351	11·48
1936	72,816	64,899	7,917	10·87

It will be seen that the ratio of children born to migrating parents has declined in the case of the Registration Area from 66·9 in 1921 to 54·2 in 1936 and in the case of the nine provinces from 46·3 in 1926 to 39·3 in 1936. Between the years 1921 and 1928 in the Registration Area the proportion of births associated with migration decreased 4·0 p.c. and for the seven-year period 1929-36 the proportion decreased 8·92 p.c. It would appear to be an accelerating process. In Canada over the first five-year period the decrease was 1·76 and over the last five-year period, 5·25. However, in Quebec where migration played a much smaller part, from 17·24 p.c. of all births in 1926 the proportion fell to 12·82 p.c. in 1931 and slowed up over the last five-year period to 10·87 p.c. in 1936. This is probably the best measure that can be obtained of the rate at which our population is becoming indigenous and static although, of course, it leaves out of account migration within the province and, consequently, does not fully measure the contribution of migrants to the births.

Specific Fertility Rates for Women of All Conjugal Conditions, by Birthplace, 1930-1932.—As has already been stated, no classification was made of the sex and age distribution of the population by birthplace for the Census of 1921. This classification was made, however, for the Census of 1931. Taking advantage of this data, specific fertility rates have been computed for the three-year period 1930-32 which centres around the date of the 1931 Census. From these specific fertility rates, total fertility rates have been computed and both are shown in Statement LXXVIII.

LXXVIII.—SPECIFIC FERTILITY RATES[1] OF WOMEN 15-49 YEARS OF AGE OF ALL CONJUGAL CONDITIONS, BY AGES AND BIRTHPLACE OF MOTHER, WITH TOTAL FERTILITY RATES[2], BY BIRTHPLACE, OF MOTHER, CANADA, 1930-1932

Birthplace of Mother	Specific Fertility Rates for Mothers in Age Group							Total Fertility Rates
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
All birthplaces	29·5	136·7	174·4	144·9	103·2	44·8	5·3	3·19
Canada	28·0	132·2	178·1	154·9	114·4	51·6	6·1	3·33
Prince Edward Island	28·5	131·0	172·4	161·1	115·1	48·9	4·3	3·31
Nova Scotia	43·4	147·4	162·3	135·8	100·7	44·2	5·0	3·19
New Brunswick	40·7	152·1	190·6	164·9	122·1	60·8	7·6	3·69
Quebec	21·0	142·3	223·3	209·0	170·9	81·8	10·6	4·29
Ontario	32·1	116·8	135·8	109·3	71·8	28·5	2·6	2·48
Manitoba	25·0	120·5	158·8	134·3	95·9	49·1	6·6	2·95
Saskatchewan	27·9	142·1	180·2	152·3	110·4	62·9	14·8	3·45
Alberta	29·6	146·4	182·8	154·7	113·6	57·7	13·8	3·49
British Columbia	20·6	94·4	118·0	92·2	59·7	33·1	7·2	2·13
British Isles	35·5	127·8	139·3	105·6	67·3	24·8	2·5	2·51
England	36·2	126·0	136·6	102·1	66·8	25·3	2·7	2·48
Ireland	33·9	139·6	156·8	120·8	73·5	25·3	2·1	2·76
Scotland	33·5	125·9	138·6	109·2	66·6	22·9	2·5	2·50
Wales	5·1	159·8	164·1	124·4	73·9	35·2	1·1	2·82
British Possessions	37·8	148·7	181·4	133·1	91·3	35·0	5·3	3·16
Newfoundland	44·9	179·9	212·5	160·0	117·7	46·5	7·0	3·84
Europe	50·4	173·2	189·9	148·4	104·4	46·4	7·6	3·60
Austria	124·0	318·9	320·0	268·0	204·1	94·4	16·8	6·73
Belgium	67·9	177·7	147·6	110·4	78·4	33·2	6·0	3·11
Denmark	40·6	155·9	171·0	131·0	81·8	38·6	–	3·09
Finland	47·1	100·9	98·6	74·7	44·3	22·2	4·4	1·96
France	21·7	127·5	131·9	95·5	74·0	27·7	3·2	2·41
Germany	52·0	183·5	186·2	131·4	86·5	46·6	4·3	3·45
Holland	29·9	167·2	200·4	149·5	115·7	44·8	6·1	3·57
Hungary	101·6	252·5	237·3	168·0	132·1	58·3	12·2	4·81
Italy	80·5	245·0	235·0	180·9	134·8	58·9	8·3	4·72
Norway	40·4	165·7	184·5	144·8	114·8	50·8	8·4	3·55
Poland	43·3	157·9	180·7	138·0	85·2	36·7	7·6	3·25
Roumania	58·8	154·4	159·1	106·3	76·6	33·3	5·4	2·97
Russia	31·6	162·8	200·7	170·1	115·3	53·9	8·2	3·71
Sweden	62·0	154·5	163·5	127·5	98·4	35·6	6·6	3·24
Asia	59·8	267·0	254·8	205·4	147·2	64·8	11·2	5·05
China	9·0	142·0	220·1	232·2	208·1	88·8	23·8	4·62
Japan	135·8	370·5	296·7	218·1	156·0	78·1	10·4	6·33
United States	47·1	156·8	162·0	122·9	83·0	37·1	3·6	3·06

[1] Rates per 1,000 women of age and birthplace specified.
[2] For method of calculation, see page 284.

Considering first the specific rates for Canadian-born women, it will be observed that while the rates for the two youngest age groups are below those for "all birthplaces", in the group 25-29 the rate for Canadian women is higher and becomes proportionately higher and higher in each consecutive age group. Among the provinces of Canada there are only two that differ very much from the rate for Canadian-born women. These are Quebec, which is considerably higher in all but the 15-19 age group, and British Columbia, which is considerably lower in all groups except the oldest.

The women born in the British Isles, with one exception, Wales, have higher specific rates than those of all birthplaces in the age group 15-19; but in all the groups over 20 years their rates are lower with two exceptions, both in the age group 20-24. Newfoundland shows higher rates in all groups.

Among the European countries, Hungary and Austria show high specific fertility rates throughout all age groups while Finland and France show comparatively low ones. France is the only country lower than average in all age groups. The specific fertility rates of women born in Asia as a whole, China and Japan are higher than for "all birthplaces" (except China in the age group 15-19) and in most cases considerably so. However, it must be remembered that these rates result from small female population and a small number of births. Specific fertility rates for women born in the United States are slightly better than the average in the two young age groups and slightly lower in the other five age groups. This is just the reverse of the rates for Canadian-born women.

Total Fertility Rates, by Birthplace, 1930-1932.—Turning now to the total fertility rate (the number of children born to a woman passing through the whole child-bearing period), we find a rate of 3·19 children for all women in Canada. This varies through the individual birthplaces from 6·73 children for women born in Austria to 1·96 children for women born in Finland (Statement LXXVIII).

While the rates for women born in Canada as a whole and six of the provinces are higher than the rate for "all birthplaces"—Quebec being the highest with a rate of 4·29—women born in Ontario, Manitoba and British Columbia are lower. The last-named province is the lowest with a rate of 2·19 children. Foreign birthplaces whose women have a higher rate than that of Quebec are Austria with 6·73, Japan with 6·33, Asia as a whole with 5·05, Hungary with 4·81, Italy with 4·72 and China with 4·62. The birthplaces with the lowest fertility rates are Finland and British Columbia; next are France with 2·41, Ontario and England with 2·48, Scotland with 2·50, the British Isles as a whole with 2·51, Ireland with 2·76, Wales with 2·82, Manitoba with 2·95 and Roumania with 2·97.

Conclusions.—Some of the important features brought out in this chapter are: (1) there was a definite increase in the proportion of children born to Canadian-born parents; (2) birthplace has no significant influence on the fertility of women as measured by the average number of children; (3) although 13 out of 100 estimated survivors of the births over the period 1926-36 were to foreign-born mothers and 39 out of 100 births in Canada were still associated with migration, the births associated with migration decreased continually and rapidly over the period 1926-36; (4) the rapid decrease in births associated with migration indicates that our population is fast becoming static. The consequences of this are difficult to forecast. From one point of view it should mean that the population is apt to become more attached to home life and probably grow less sporadically than it has done in the past thirty years. Again, since we know that in the immediate past a very large part of the population represented different countries, this rapid approach to indigenity indicates that this differentiation in birthplace has not proved as serious a barrier to intermarriage as seemed probable in the early part of the period. However, there may be other points of view, including the possibility that the tendency to become static is merely a cyclical matter due to depressed economic conditions and also that a static condition may be, partly at least, responsible for the decline in births.

CHAPTER VII

REGIONAL DIFFERENCES IN FERTILITY

Introduction.—The value for Canada or any large country as a whole of a statistic such as crude birth rate is manifestly limited. It is an average from which, knowing the size of the population, the total number of births may be calculated; also, this average for the whole country in one year can be compared with that in another. But in a country as large, from point of view of geographical area, as Canada, a rate like this cannot be compared with a rate in another and smaller country or a country with a more homogeneous population. Furthermore, this average rate has no meaning unless it is representative of the birth rates of the different sections of the country, so that the general rate may be said to be typical of the individual areas or a large number of them. Conceivably, the rates of the individual regions of Canada tend to settle down to or stabilize at this central point; if not, *i.e.*, if the individual rates are independent, there is no meaning to the general rate. It follows that it is of first importance to examine the birth rates of the different types of regions of Canada. The types of regions that will be examined in this chapter are: (1) urban municipalities grouped by size; (2) counties and census divisions exclusive of cities and towns of 5,000 and over; (3) the 220 counties or census divisions and a few subdivisions into which the census divisions are divided (227 in all). Obviously, before a thorough study of the incidences of birth rates in this threefold classification could be made, it was necessary to obtain figures of births by place of residence of mothers in contradistinction to births by place of occurrence. These, tabulated for the first time for the purpose of this monograph, are shown in Tables 14 and 15, Part III, pages 366 and 372.

Provincial Birth Rates by Size Groups of Urban Municipalities and "Remaining Parts".—In Table 14, Part III, page 366, the births by residence of mother for each city, town or "remaining part" of county or census division have been averaged for the three years 1930-32 and crude birth rates have been computed on the census population as of June 1, 1931.

Standardized* birth rates have also been computed for each of these units in the following manner:—

(1) Expected birth rates have been computed by listing the female population of each unit between the 15th and 50th birthday by five-year age groups and applying to each age group the average birth rate for that group obtaining in the Dominion as a whole over the three years 1930-32, then summing the births thus computed for the various age groups and dividing the sum by the total population of the unit.

(2) The standardized rates have been computed from the crude and expected rates by the following equation:—

$$\text{S.R. (for a given unit)} = \frac{\text{E.R. for Canada}}{\text{E.R. for the given unit}} \times \text{C.R. for the given unit}$$

where S.R. means standardized rate, E.R. means expected rate and C.R. means crude rate.

Statement LXXIX presents a summary of Table 14 for size groups of urban municipalities classified according to population and for the "remaining parts". For this purpose the following groups have been distinguished:—

(a) cities of 100,000 population and over;
(b) cities of 40,000-100,000 population;
(c) cities and towns of 10,000-40,000 population;
(d) cities and towns of 5,000-10,000 population;
(e) "remaining parts", consisting of towns under 5,000 population, all villages and all rural parts.

In addition to the grouping for Canada as a whole the figures for these different classes are also summarized for the Maritime Provinces as a unit, Quebec, Ontario, the Prairie Provinces as a unit and British Columbia. In these regional groups, however, the figures for cities of 40,000 and over are given singly without class totals.

* Standardized for age.

LXXIX.—POPULATION, BIRTHS AND CRUDE, EXPECTED AND STANDARDIZED BIRTH RATES[3], BY SIZE GROUPS OF URBAN MUNICIPALITIES AND "REMAINING PARTS," CANADA AND PROVINCES, 1931

Item	Population, Census of 1931	Average of Live Births by Residence of Mother, 1930-32	Birth Rates per 1,000 Population		
			Crude	Expected	Standardized[4]
Canada[1]	10,362,833	239,878	23·1	23·0	23·1
Cities of 100,000 and over	2,328,175	48,381	20·8	27·9	17·1
Cities of 40,000-100,000	561,248	11,846	21·1	27·5	17·7
Cities and towns of 10,000-40,000	983,692	22,873	23·3	25·7	20·8
Cities and towns of 5,000-10,000	454,450	11,238	24·7	24·1	23·6
Remaining parts[2]	6,035,268	145,540	24·1	20·2	27·5
Maritime provinces	1,009,103	24,089	23·9	20·8	26·4
Prince Edward Island	88,038	1,886	21·4	19·4	25·4
Nova Scotia	512,846	11,526	22·5	20·8	24·8
New Brunswick	408,219	10,677	26·2	21·1	28·5
Cities of 40,000 and over—					
Halifax, N.S.	59,275	1,410	23·8	28·2	19·4
Saint John, N.B.	47,514	1,065	22·4	26·3	19·6
Cities and towns of 10,000-40,000	78,585	1,912	24·3	28·1	19·9
Cities and towns of 5,000-10,000	95,139	2,427	25·5	24·1	24·3
Remaining parts[2]	728,590	17,274	23·7	18·6	29·3
Quebec	2,874,255	83,403	29·0	23·9	27·9
Cities of 40,000 and over—					
Montreal	818,577	19,968	24·4	28·0	20·0
Quebec	130,594	4,309	33·0	27·7	27·4
Verdun	60,745	1,507	24·8	28·9	19·7
Cities and towns of 10,000-40,000	282,756	7,770	27·5	26·5	23·8
Cities and towns of 5,000-10,000	98,621	3,421	34·7	24·8	32·2
Remaining parts[2]	1,482,962	46,428	31·3	20·6	35·0
Ontario	3,431,683	68,908	20·1	23·9	19·3
Cities of 40,000 and over—					
Hamilton	155,547	3,076	19·8	26·5	17·1
London	71,148	1,170	16·4	26·9	14·0
Ottawa	126,872	2,503	19·7	28·7	15·8
Toronto	631,207	11,607	18·4	29·1	14·5
Windsor	63,108	1,391	22·0	27·4	18·5
Cities and towns of 10,000-40,000	487,270	10,879	22·3	25·3	20·3
Cities and towns of 5,000-10,000	175,793	3,700	21·0	24·0	20·1
Remaining parts[2]	1,720,738	34,583	20·1	20·7	22·3
Prairie Provinces	2,353,529	52,976	22·5	21·9	23·6
Manitoba	700,139	14,188	20·3	23·1	20·2
Saskatchewan	921,785	21,523	23·3	21·0	25·5
Alberta	731,605	17,265	23·6	21·8	24·9
Cities of 40,000 and over—					
Calgary, Alta.	83,761	1,574	18·8	26·4	16·4
Edmonton, Alta.	79,197	1,646	20·8	26·8	17·8
Regina, Sask.	53,209	1,204	22·6	29·2	17·8
Saskatoon, Sask.	43,291	878	20·3	28·1	16·6
Winnipeg, Man.	218,785	3,553	16·2	28·5	13·1
Cities of 10,000-40,000	78,475	1,483	18·9	25·0	17·4
Cities and towns of 5,000-10,000	43,560	879	20·2	24·4	19·0
Remaining parts[2]	1,753,251	41,759	23·8	20·0	27·3
British Columbia	694,263	10,503	15·1	21·7	16·1
Cities of 40,000 and over—					
Vancouver	246,593	3,365	13·6	24·4	12·9
Cities of 10,000-40,000	56,606	829	14·6	22·6	14·9
Cities of 5,000-10,000	41,337	811	19·6	22·4	20·1
Remaining parts[2]	349,727	5,497	15·7	19·5	18·5

[1] Exclusive of Yukon and the Northwest Territories.
[2] Comprising towns under 5,000, all villages and all rural parts.
[3] See page 324 for method of computation.
[4] The standardized rates were computed from the crude and expected rates carried to two places of decimals.

Canada as a whole had a birth rate averaging 23·1 per thousand population over the three-year period. The lowest rate (both crude and standardized) in its constituent parts is shown for cities of 100,000 and over, the crude rate for this group being 20·8 per thousand and the standardized rate only 17·1 per thousand. Cities of 40,000-100,000 stand next in order in both crude and standardized rates, with 21·1 and 17·7 per thousand, respectively. The highest group crude rate, 24·7 per thousand, is for cities and towns of 5,000-10,000, but standardization gives the highest rate to the small towns, villages and rural units which make up "remaining parts", the standardized rates for this group for all Canada being 27·5 per thousand as against 23·6 for the cities and towns of 5,000-10,000. Not only do "remaining parts" show the highest standard-

ized group rate for Canada as a whole, but also for each section for which the summary has been made, with the exception of British Columbia in which the cities of 5,000-10,000 show the highest rate, whether crude or standardized.

Effect on Birth Rates of Conjugal Condition of Women at Child-Bearing Ages.—It will be observed that the method of standardization described above is based on the comparison of the actual number of births in a given unit or group of units with the number which might be expected from the proportion of females, whether married or unmarried, in each of the child-bearing groups of ages, and takes no account of the conjugal condition of these females. Had the Canadian rates (specific fertility) which were used as an index been only those for legitimate births, and had these been applied only to the number of married women of child-bearing ages in each unit or group, we would have an expected rate measuring the fertility within marriage. However, we want a rate which, while based only on married women, includes all births. Each expected rate obtained by this second method was, therefore, multiplied by 1·036 to make allowance for illegitimate births on the basis of the proportion in Canada as a whole before using it in the second part of the formula for obtaining the standardized rate.

The census data of age, by conjugal condition, which is required for such computation, was available only for cities of 30,000 and over. This second method of standardization has, therefore, only been applied to such cities, and the expected and standardized birth rates so obtained are shown in Statement LXXX hereunder.

LXXX.—CRUDE, EXPECTED AND STANDARDIZED BIRTH RATES ALLOWING FOR FERTILITY, WITHIN MARRIAGE, CITIES OF 30,000 POPULATION AND OVER, 1931

City	Birth Rates per 1,000 Population		
	Crude	Expected	Standardized
Brantford, Ont.	19·7	24·1	18·9
Calgary, Alta.	18·8	26·3	16·5
Edmonton, Alta.	20·8	26·4	18·2
Halifax, N.S.	23·8	24·8	22·2
Hamilton, Ont.	19·8	26·9	17·0
Kitchener, Ont.	22·2	28·7	17·9
London, Ont.	16·4	24·1	15·8
Montreal, Que.	24·4	23·7	23·7
Ottawa, Ont.	19·7	21·5	21·2
Quebec, Que.	33·0	18·7	40·8
Regina, Sask.	22·6	28·3	18·5
Saint John, N.B.	22·4	22·7	22·8
Saskatoon, Sask.	20·3	27·6	17·0
Toronto, Ont.	18·4	25·2	16·9
Trois-Rivières, Que.	36·7	23·1	36·8
Vancouver, B.C.	13·6	23·0	13·7
Verdun, Que.	24·8	31·0	18·2
Victoria, B.C.	12·6	18·1	16·0
Windsor, Ont.	22·0	30·6	16·6
Winnipeg, Man.	16·2	25·0	15·0

Wherever the standardized rate of a city in Statement LXXX is above the standardized rate for the same city in Statement LXXIX it indicates that the conjugal condition of the women of child-bearing ages in that city is more unfavourable from the standpoint of births than in Canada as a whole. Thus the city of Ottawa shows a standardized rate of only 15·8 in Statement LXXIX but this rate is raised to 21·2 in Statement LXXX. The difference between these rates reflects the fact that Ottawa contains a very unusual proportion of unmarried women at the child-bearing ages, due to the large proportion of female employees in the Civil Service. A similar pronounced relationship between the two rates exists in the city of Quebec, where the standardized rate in Statement LXXIX is 27·4 and in Statement LXXX, 40·8. On the other hand, the city of Hamilton, which has a standardized rate of 17·1 in Statement LXXIX shows a standardized rate of 17·0 in Statement LXXX. Here evidently the conjugal condition of the

female population of child-bearing ages is about as favourable to high fertility as in the country taken as a whole. It may be interesting to compare the proportion of married females at the child-bearing ages in the cities of Hamilton, Ottawa and Quebec with the corresponding proportion in Canada taken as a whole.

LXXXI.—PROPORTION OF FEMALES 15-49 YEARS OF AGE MARRIED, BY QUINQUENNIAL AGE GROUPS, CANADA, HAMILTON, OTTAWA AND QUEBEC CITY, 1931

Age Group	Canada	Hamilton	Ottawa	Quebec
	p.c.	p.c.	p.c.	p.c.
15-49	56·11	58·89	45·68	40·63
15-19	5·03	5·20	3·23	1·78
20-24	36·47	37·42	23·31	18·74
25-29	66·57	67·40	48·34	47·07
30-34	79·14	78·86	63·84	62·48
35-39	82·57	81·28	69·06	68·55
40-44	82·68	81·42	70·78	68·82
45-49	81·34	78·82	69·81	69·34

Geographical Regions.—By way of a general picture, Statement LXXXII shows the variety of resident birth rates occurring in the 227 divisions and in the cities and towns of 5,000 population and over. For this purpose the birth rates were arranged in order of size and divided into seven classes. The highest birth rate recorded was 48·6 in Drummondville, Que., and the lowest was 3·0 in Division No. 10A, B.C. To enable the reader to grasp more readily the significance of the classes, a scale of reference is given at the foot of the statement showing which countries of the world (where birth rates are known) fall into each class. The highest class in the arrangement of Statement LXXXII is "40 and over" in which is found only one country, Egypt, but contains seven cities and towns of Canada, and the rural parts of three counties, *viz.*, Lac-St-Jean, Chicoutimi and Matane, all in Quebec. The lowest class is "under 15". This class is also represented by only one country, Sweden, and contains, for Canada, five counties, six cities and towns with population of 5,000 and over and the rural parts of seven counties, *viz.*, Divisions Nos. 2, 4, 5A, 9A, 10A and 10B, all in British Columbia and Wentworth, rural parts, in Ontario. The cities which fall in the highest class are Drummondville, Jonquiere, Chicoutimi, Thetford Mines, Shawinigan Falls, Rimouski, all in Quebec, and Edmundston in New Brunswick.

LXXXII.—NUMBER IN EACH BIRTH RATE CLASS (CRUDE AND STANDARDIZED) OF COUNTIES TAKEN AS A WHOLE, "REMAINING PARTS" AND CITIES AND TOWNS OF 5,000 POPULATION AND OVER, 1931, AND SHOWING A SCALE OF REFERENCE OF THE COUNTRIES OF THE WORLD

Birth Rate Class	Crude Rate			Standardized Rate		
	County as a Whole	"Remaining Parts"	Cities and Towns of 5,000 population and over	County as a Whole	"Remaining Parts"	Cities and Towns of 5,000 population and over
Under 15	5	7	6	5	2	11
15-19	57	58	43	30	23	64
20-24	79	78	44	67	67	25
25-29	34	38	18	50	55	12
30-34	32	28	10	35	36	15
35-39	17	15	9	19	22	5
40 and over	3	3	7	21	22	5

	Countries of the world (where birth rates are known) falling into each class:
Under 15	Sweden
15-19	Australia, Austria, Belgium, Denmark, Eire, England and Wales, Esthonia, Finland, France, Germany, Latvia, New Zealand, Norway, Scotland, Switzerland, United States (R.A.)
20-24	Czechoslovakia, Hungary, Italy, Netherlands, Newfoundland, Northern Ireland, Uruguay
25-29	Bulgaria, Iceland, Spain, Union of South Africa (Whites)
30-34	Chile, Greece, India, Japan, Jamaica, Poland, Portugal, Roumania
35-39	Ceylon
40 and over	Egypt

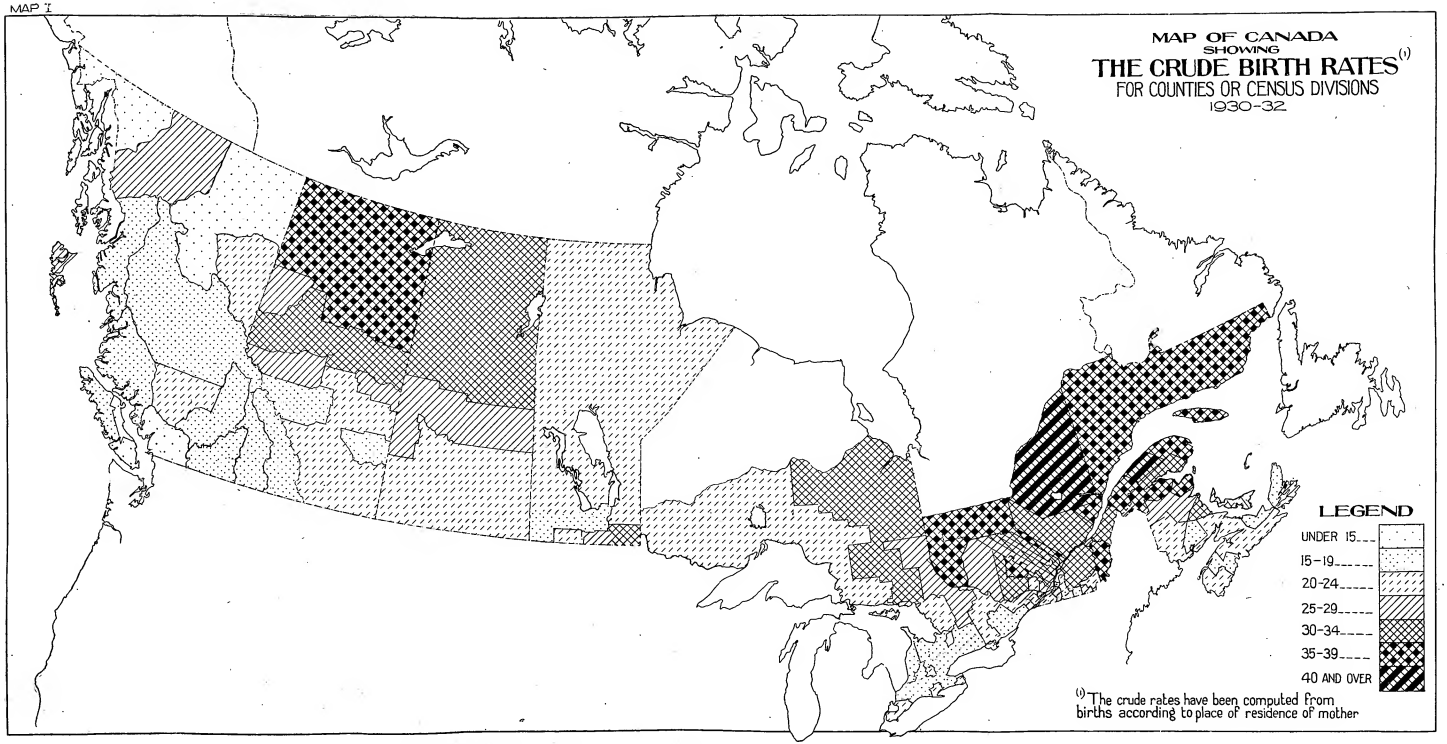
Map I shows the regional distribution of crude birth rates for counties as a whole and Map II shows the same thing for counties exclusive of cities and towns of 5,000 population and over. Owing to exigencies of space, the counties are not shown in the maps but the Index Map* and the key to it should obviate any inconvenience on this score. What is really important in a regional presentation of data is to ascertain whether there is any regional clustering, *i.e.*, whether the aspect of one county is a reflection of the aspects of the surrounding counties or of the zone in which it is found. If not, *i.e.*, if the counties behave individually, we cannot say that there is a regional tendency.

Regional Tendencies of Counties as a Whole.—With Map I in front of him the reader can see that there is a definite clustering. The members of the highest class (40 and over, corresponding in birth rate to Egypt) are found in two adjoining counties and another county that is close by. The second highest (35-39, corresponding to Ceylon), with the exception of one group, occur in northern and thinly settled or new parts of Quebec. New Brunswick and Alberta. The counties in the exceptional group are Frontenac, Beauce and Dorchester, Que. These and other exceptions will be dealt with further on, but it should be noticed that they occur in a group instead of individually. The next highest (30-34, corresponding to countries such as Chile) follows the same general tendency, spreading, however, to the new parts of Ontario, Manitoba, the northern parts of Saskatchewan and a part in Alberta south of the higher class already mentioned. An apparent exception is Kent, N.B. One more class (25-29, corresponding to countries such as Bulgaria) may be regarded as high. This class, on the whole, forms clusters south of the higher classes already mentioned. Apparent exceptions appear in Cape Breton, N.S., Prince, P.E.I., Division No. 2, Man., Queen Charlotte Island and Division No. 9B, B.C. The next class (20-24, corresponding to Italy) is what might be termed the average, *i.e.*, the middle of it corresponds to the Canada rate of 23·1. It is remarkably continuous and seems to be connected with latitude. Coming now to the classes which may be regarded as low, the 15-19 class (corresponding to France) has definite localities, *viz.*, the Pacific Slope, southern Manitoba, the Ontario peninsula, apparent exceptions being one division in Alberta, four counties in Quebec and sections of the Maritime Provinces. It will be noticed that, on the whole, this class covers either the most thickly settled or the oldest parts, the Pacific Slope coming under the category of thickly settled because its population is found mainly in urban centres. Inverness, Victoria, Pictou, Antigonish, Annapolis and Lunenburg in Nova Scotia, and Kings in Prince Edward Island are well known to be not only old regions but also parts that have suffered measurable depopulation from emigration of both sexes, which undoubtedly affected the birth rate. The lowest class (under 15, corresponding to Sweden) is obviously exceptional as a class occurring in the north and extreme southwest of British Columbia.

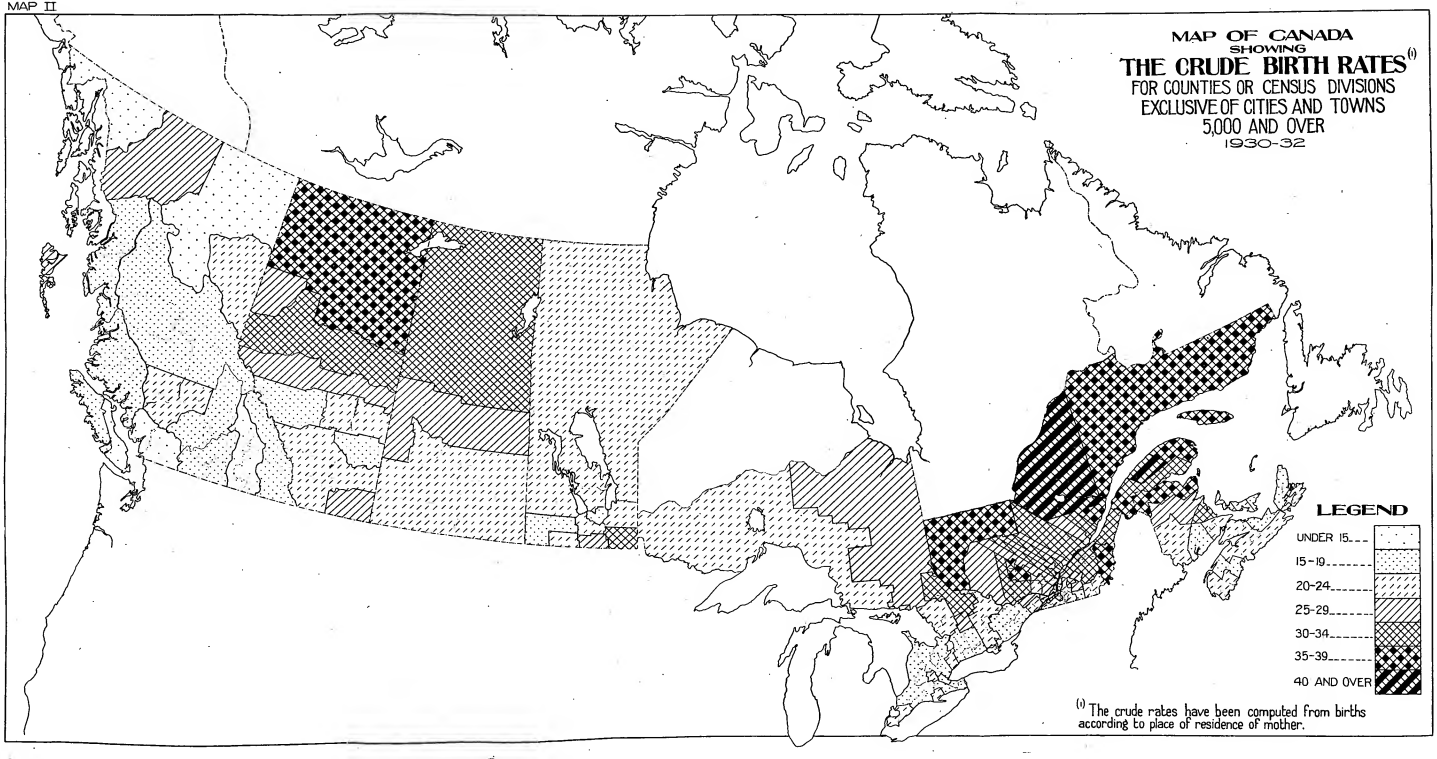
The Canadian Birth Rate (23·1) as the Regional Average.—In some respects the Canadian birth rate of 23·1 in 1930-32 is typical as a regional average. It covers a large central territory in which is found the centres of Canada's population and which contains 40 p.c. of the population. It is also the predominant class in the Maritime Provinces. If the average had been merely a balance between a small area with a very large population and extremely low birth rate and a large area with a small population and a very high birth rate, the 23·1 could not be regarded as typical and, to this extent, a fair picture of the true birth rate could not be given by one figure unaccompanied by supplementary figures showing the incidences of area and population. Table 16, Part III, page 386, shows the 227 divisions of Canada in seven classes in order of size and names the members of these classes with their resident crude birth rates, their population in 1931 and their area in square miles. A summary of this data is contained in Statement LXXXIII and shows the proportion each class forms of the total, both as regards population and land area. The two classes below average contain 34 p.c. of the population of Canada and 21 p.c. of the land area; the average class contains 40 p.c. of the population and 32 p.c. of the land area; the four classes above average contain almost 26 p.c. of the population and 47 p.c. of the land area. All this seems to show that the average of 23·1 is good; however, we cannot regard other than significant that nearly half of the land area is in the highest classes.

*Opposite page XLVIII.

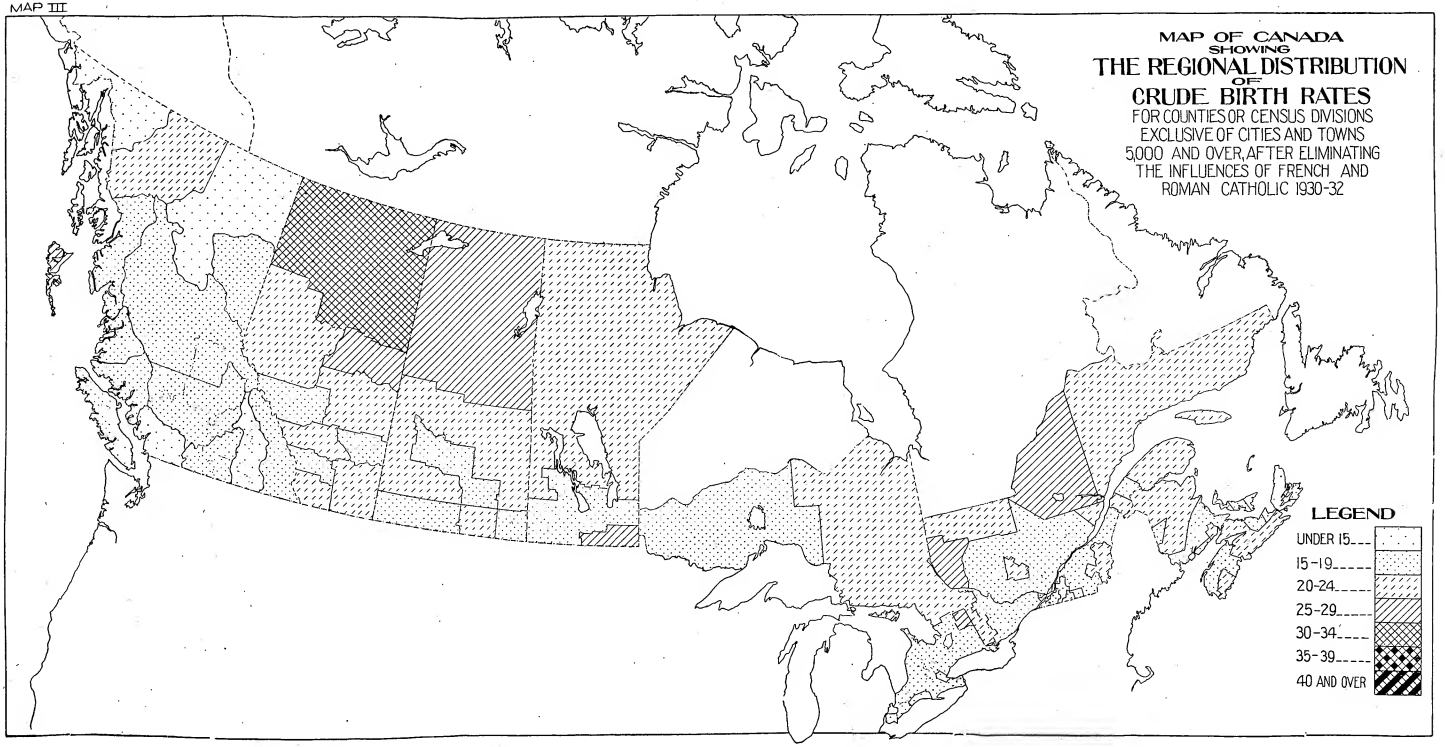
MAP I


MAP OF CANADA
SHOWING
THE CRUDE BIRTH RATES(1)
FOR COUNTIES OR CENSUS DIVISIONS
1930-32
LEGEND
UNDER 15
15-19
20-24
25-29
30-34
35-39
40 AND OVER
(1) The crude rates have been computed from births according to place of residence of mother

MAP II


MAP OF CANADA
SHOWING
THE CRUDE BIRTH RATES(1)
FOR COUNTIES OR CENSUS DIVISIONS
EXCLUSIVE OF CITIES AND TOWNS
5,000 AND OVER
1930-32
LEGEND
UNDER 15
15-19
20-24
25-29
30-34
35-39
40 AND OVER
(1) The crude rates have been computed from births according to place of residence of mother.

MAP III


MAP OF CANADA
SHOWING
THE REGIONAL DISTRIBUTION
OF
CRUDE BIRTH RATES
FOR COUNTIES OR CENSUS DIVISIONS
EXCLUSIVE OF CITIES AND TOWNS
5,000 AND OVER, AFTER ELIMINATING
THE INFLUENCES OF FRENCH AND
ROMAN CATHOLIC 1930-32
LEGEND
UNDER 15
15-19
20-24
25-29
30-34
35-39
40 AND OVER

LXXXIII.—PERCENTAGE ACCOUNTED FOR BY COUNTIES AND CENSUS DIVISIONS IN BIRTH RATE CLASS OF (1) POPULATION OF CANADA, 1931, AND (2) LAND AREA OF CANADA

Birth Rate[1] Class	P.C. Accounted for by Counties and Divisions in Class of	
	Population of Canada 1931	Land Area of Canada
Under 15	4·78	5·80
15-19	29·60	15·37
20-24	39·79	31·60
25-29	9·17	9·91
30-34	10·32	16·32
35-39	4·88	18·25
40 and over	1·46	2·74

[1] Crude rate.

Regional Tendencies for Rural and Small Urban Centres.—Map II shows the resident birth rates in counties and census divisions excluding cities and towns of 5,000 population and over. The points of interest are the changes effected by the exclusion of the cities. It is really remarkable that the exclusion raised only five counties, while it lowered nineteen. The two rates and the cities and towns which brought about the change are shown for these counties in Statement LXXXIV.

Probably small towns and rural non-farm population, particularly the part of it found in suburban areas, are at least partly responsible for the fact that the exclusion of large cities (*i.e.*, Quebec in Quebec county) has lowered rather than raised the birth rate.

LXXXIV.—COUNTIES WHOSE CRUDE BIRTH RATES WERE AFFECTED BY THE EXCLUSION OF CITIES AND TOWNS OF 5,000 POPULATION AND OVER, SHOWING CRUDE RATES FOR THE COUNTIES AS A WHOLE AND FOR THE "REMAINING PARTS," 1931.

County	Crude Birth Rate for County as a Whole	Cities and Towns of 5,000 Population and over	Crude Birth "Rate for Remaining Part" of County
Cape Breton, N.S.	26·5	Sydney, Glace Bay, New Waterford, North Sydney, Sydney Mines	22·1
Saint John, N.B.	21·0	Saint John	16·0
Beauharnois, Que.	24·8	Valleyfield	19·4
Drummond, Que.	32·5	Drummondville	27·1
Montreal and Jesus Islands, Que.	23·2	Lachine, Montreal, Outremont, Verdun, Westmount, St-Laurent	18·3
Quebec, Que.	31·6	Quebec	26·9
Rimouski, Que.	35·1	Rimouski	33·5
Shefford, Que.	30·6	Granby	27·9
Stanstead, Que.	25·3	Magog	22·0
St-Jean, Que.	25·9	St-Jean	23·8
St-Maurice, Que.	35·8	Shawinigan Falls, Trois-Rivières	29·6
Terrebonne, Que.	30·8	St-Jérôme	29·2
Carleton, Ont.	20·1	Ottawa, Eastview	19·1
Cochrane, Ont.	30·4	Timmins	29·0
Nipissing, Ont.	29·0	North Bay	31·9
Stormont, Ont.	25·7	Cornwall	22·2
Sudbury, Ont.	31·1	Sudbury	28·3
Welland, Ont.	20·3	Niagara Falls, Welland, Fort Erie, Port Colborne, Thorold	18·0
Wentworth, Ont.	18·9	Hamilton, Dundas	14·5
York, Ont.	19·0	Toronto, Mimico, New Toronto	20·6
Division No. 6, Man.	17·5	Portage la Prairie, St. Boniface, Winnipeg	22·8
Division No. 1, Alta.	23·7	Medicine Hat	26·8
Division No. 11, Alta.	23·0	Edmonton	26·6
Division No. 2, B.C.	17·4	Nelson, Trail	13·8

Correlation between Regional Birth Rates and Types of People.—In Chapter V the birth rate was examined for racial differentiation. A considerable differentiation was discovered and the French element of the population was observed to show conspicuously high birth rates. This and the fact that they are the second dominant element in our population suggests the question of how their preponderance in certain regions influences the regional distribution of

birth rates. It is true that regional distribution measured on a county basis should take into consideration other races as well as French, *e.g.*, certain divisions in the Prairie Provinces are predominantly races other than British and French. However, it does not seem necessary to show the influence of each separate race. It is almost patent that the French as a race and Roman Catholic as a religion are two powerful elements entering into the birth rate. It will be useful to know the regional differentiation once these two elements are removed and, accordingly, in Table 17, Part III, page 388, we show certain correlations.

Incidental to the main purpose, these correlations investigate whether the correlation varies in any way with types of localities differentiated as rural and size groups of urban. It is remarkable and difficult to explain that the rural shows a lower correlation than the different size groups of urban centres (except one, the case of cities and towns of 10,000–30,000). There is something peculiar in the behaviour of this particular type of urban centre, observable in other phases of fertility besides this correlation. As to the lower correlation in the case of rural, indeed the correlation is not at all high and it is true both of the racial and the religious elements. It would seem to indicate that rural birth rates are less dependent upon types of people than are urban birth rates.

Table 17 shows the standardized birth rate and percentage French for a sample of the "remaining parts" of the counties or census divisions and for the complete number of cities and towns falling into each of the four size groups of urban municipalities. These two items were correlated for each group. The number of separate units represented in the cities of 30,000 population and over is only 20 and for this reason and because of their type of distribution the correlation may not be as reliable as the others. The real story would seem to be that the correlation does not vary significantly as between different types of communities and this makes the coefficient of about ·70 running through all the correlations the more reliable. Since the table is given only to show and measure the extent of correlation, no use is made of the regression equation.

Table 17 shows, also, the percentage Roman Catholic and the correlation for each group of this item with the standardized birth rate. A summary of the correlations of Table 17 is given in Statement LXXXV.

LXXXV.—CORRELATION OF STANDARDIZED BIRTH RATE WITH (1) PERCENTAGE FRENCH AND (2) PERCENTAGE ROMAN CATHOLIC, FOR SIZE GROUPS OF URBAN MUNICIPALITIES AND "REMAINING PARTS"

Item	Correlation of Standardized Birth Rate with	
	P.C. French	P.C. Roman Catholic
"Remaining parts"	·67	·71
Cities and towns of 5,000-10,000	·72	·80
Cities and towns of 10,000-30,000	·63	·68
Cities and towns of 30,000 and over	·84	·86

It is seen that the correlations with the percentage Roman Catholic are somewhat higher than with the percentage French. As before, the same type of correlation (around ·75) persists. There may be some significance, however, in the fact that the highest coefficients are shown for the largest and the smallest urban units, particularly in view of a fact observed elsewhere in the behaviour of birth rates in the middle sized cities.

Two points should be mentioned in connection with these correlations. The first is that the birth rates used are standardized and as such are free from the influence of age; they are not the actual birth rates. It has been observed elsewhere that the age distribution is not particularly favourable to the French race and that the standardized rates are somewhat higher than the crude. The second point is connected with the significance of a correlated coefficient. The typical coefficients, ·70 for French and ·75 for Roman Catholic, are not remarkably high since it is clear from Maps I and II that there is also a certain regional influence entering into these correlations, *e.g.*, the northern parts of Quebec, Ontario, Saskatchewan and Alberta, where the Indians are largely Roman Catholic. The crude birth rate of Indians is very high, *viz.*, 30·8 in 1931-32. A large French element also is found in these northern parts. Since the influences of race and religion are thus intermingled with the regional influences, it becomes very desirable

to ascertain what regional influences exist independently of race and religion. To ascertain this, a multiple correlation was measured taking the "remaining parts" of the counties and census divisions and correlating the crude birth rate (X_1) as dependent variable with percentage French (X_2) and percentage Roman Catholic (X_3). The correlation was ·71 in which the two elements—French and Roman Catholic—had almost equal weights. (The equation is seen in the footnote.) The square of the standard deviation of the crude birth rate was 45·1 (the standard deviation being 6·5). The correlation thus means that French and Roman Catholic, with whatever regional influences they reflected, were responsible for 22·6 out of the 45·1 leaving 22·5 or a standard deviation of 4·8 still to be accounted for by regional influences independent of race and religion.

To show the birth rate independent of race and religion the following device was used. The birth rate was calculated by means of the regression equation $X_1 = A+BX_2 + CX_3$. This calculation, shown in Table 18, Part III, page 390, was then reduced to an index with A (*i.e.*, 18·9) as a base. This index was then divided into the actual birth rates of the counties or divisions, the result being regarded as the birth rate independent of race and religion. This process is justified on the basis of the motive of the data and the results rather than on the score of strict mathematical precision, since to be mathematically accurate we should have subtracted the calculation from the actual instead of dividing. If the latter had been done, the results could not be intelligibly shown on a map, and it was ascertained satisfactorily that the difference in this case was not sufficiently significant to justify using plus and minus signs on a map with all the confusion that would ensue.

Map III shows the regional distribution of crude birth rates independent not only of race and religion but of such regional influences as were inseparably associated with race and religion. It will be observed that only the two highest classes have disappeared (comparing Map III with Map II), and that the lowest class was increased or introduced only in Ontario, Quebec and the Maritimes. Statement LXXXVI showing the comparative number in each class on Maps II and III summarizes the changes brought about.

LXXXVI.—COMPARATIVE NUMBER OF COUNTIES IN BIRTH RATE CLASS FOR MAP II (CRUDE RATES) AND MAP III (RATES INDEPENDENT OF INFLUENCE OF FRENCH AND ROMAN CATHOLIC)

Birth Rate Class	No. of Counties in Class on	
	Map II	Map III
Under 15	7	23
15-19	58	129
20-24	78	64
25-29	38	10
30-34	28	1
35-39	15	-
40 and over	3	-

Map III unmistakeably shows that the regions of high birth rates are the regions of low population densities and those of low birth rates regions either of high population density or old regions which also suffered from emigration of young people. The exceptions mentioned in British Columbia still exist. It is interesting to find on Map III certain places standing out conspicuously that would not be noticed on the other maps, *e.g.*, Haliburton, Ont. Here we have an area of 1,486 square miles with a density in 1931 of only 4·04 and no urban population, quite close to counties with comparatively high densities. The very lowest class is still an exceptional class and the average is still predominant although, of course, the 15-19 class, that of France, England and Wales, etc., has increased.

Conclusion.—The conclusion from a regional study would seem to be quite definite, *viz.*, that there is a regional trend of low to high birth rates corresponding to areas from high to low population densities; also, from the old to the new or, what is about the same thing, from the south to the north. When the influences of race and religion are removed there would seem to be a general tendency of the birth rates for old parts to correspond to birth rates in the British Isles and Northwestern Europe. Very low birth rates would seem to have special causes, such as a history of very heavy emigration (especially of females) and low proportions in the married state as a consequence. There is no doubt that the surplus of males is one of the influences but this itself is partly regional.

PART III

TABLE 1. Number and percentage of census schedules and infant death returns matched with birth transcripts for (1) total population exclusive of Indians and (2) Indian population, Canada and provinces, 1931

Province	Total	Matched with Birth Transcripts		Not Matched with Birth Transcripts	
		No.	P.C.	No.	P.C.
CHECK FROM CENSUS SCHEDULES TO BIRTH TRANSCRIPTS					
For total population, exclusive of Indians—					
CANADA	26,205	23,187	88	3,018	12
Prince Edward Island	1,764	1,407	80	357	20
Nova Scotia	2,067	1,774	86	293	14
New Brunswick	1,865	1,668	89	197	11
Quebec	5,473	4,974	91	499	9
Ontario	5,763	5,138	89	625	11
Manitoba	2,402	2,164	90	238	10
Saskatchewan	2,806	2,454	87	352	13
Alberta	2,203	1,986	90	217	10
British Columbia	1,862	1,622	87	240	13
For Indian population—					
CANADA	2,019	1,281	63	738	37
Prince Edward Island	-	-	-	-	-
Nova Scotia	-	-	-	-	-
New Brunswick	-	-	-	-	-
Quebec	227	130	57	97	43
Ontario	453	256	57	197	43
Manitoba	366	240	66	126	34
Saskatchewan	239	163	68	76	32
Alberta	310	229	74	81	26
British Columbia	424	263	62	161	38
CHECK FROM INFANT DEATH RETURNS TO BIRTH TRANSCRIPTS					
For total population, exclusive of Indians—					
CANADA	2,721	2,591	95	130	5
Prince Edward Island	97	75	77	22	23
Nova Scotia	157	141	90	16	10
New Brunswick	169	163	96	6	4
Quebec	1,146	1,094	95	52	5
Ontario	444	438	99	6	1
Manitoba	154	142	92	12	8
Saskatchewan	250	237	95	13	5
Alberta	210	209	100	1	-
British Columbia	94	92	98	2	2
For Indian population—					
CANADA	211	184	87	27	13
Prince Edward Island	-	-	-	-	-
Nova Scotia	-	-	-	-	-
New Brunswick	-	-	-	-	-
Quebec	5	5	100	-	-
Ontario	28	24	86	4	14
Manitoba	60	48	80	12	20
Saskatchewan	76	74	97	2	3
Alberta	21	19	90	2	10
British Columbia	21	14	67	7	33

TABLE 2. Canadian Life Table for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, taking births as published

Age x	Canada						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	113,035	1,926	·98296	·01704	112,072	6,738,898	59·62
1-2	111,109	520	·99532	·00468	110,849	6,738,591	60·65
2-3	110,589	437	·99605	·00395	110,370	6,738,287	60·93
3-4	110,152	300	·99728	·00272	110,002	6,737,985	61·17
4-5	109,852	201	·99817	·00183	109,752	6,737,683	61·33
5-6	109,651	150	·99863	·00137	109,576	6,737,383	61·44
6	109,501	120	·99890	·00110	109,441	6,737,082	61·53
Weeks—							
1	109,381	617	·99436	·00564	109,072	6,736,782	61·59
2	108,764	438	·99597	·00403	108,545	0,734,691	61·92
3	108,326	389	·99641	·00359	108,132	6,732,609	62·15
Months—							
1	107,937	1,018	·99057	·00943	107,428	6,730,053	62·35
2	106,919	860	·99196	·00804	106,479	6,721,100	62·86
3	106,059	644	·99303	·00607	105,737	6,712,227	63·29
4	105,415	527	·99500	·00500	105,152	6,703,416	63·59
5	104,888	456	·99565	·00435	104,660	6,694,653	63·83
6	104,432	390	·99626	·00374	104,237	6,685,931	64·02
7	104,042	342	·99671	·00329	103,871	6,677,245	64·18
8	103,700	297	·99714	·00286	103,552	6,668,589	64·31
9	103,403	290	·99720	·00280	103,258	6,659,960	64·41
10	103,113	226	·99781	·00219	103,000	6,651,355	64·51
11	102,887	200	·99806	·00194	102,787	6,642,772	64·56
Years—							
1	102,687	1,291	·98743	·01257	102,042	6,634,206	64·61
2	101,396	640	·99369	·00631	101,076	6,532,164	64·42
3	100,756	439	·99564	·00436	100,536	6,431,088	63·83
4	100,317	317	·99684	·00316	100,158	6,330,552	63·11
5	100,000	–	–	–	–	6,230,394	62·30
FEMALES							
Days—							
0-1	110,449	1,415	·98719	·01281	109,742	6,824,702	61·79
1-2	109,034	415	·99619	·00381	108,826	6,824,401	62·59
2-3	108,619	314	·99711	·00289	108,462	6,824,103	62·82
3-4	108,305	220	·99797	·00203	108,105	6,823,623	63·00
4-5	108,085	146	·99865	·00135	108,012	6,823,327	63·13
5-6	107,939	112	·99896	·00104	107,883	6,823,031	63·21
6	107,827	96	·99911	·00089	107,779	6,822,735	63·28
Weeks—							
1	107,731	488	·99547	·00453	107,487	6,822,440	63·33
2	107,243	356	·99668	·00332	107,065	6,820,379	63·60
3	106,887	323	·99698	·00302	106,726	6,818,325	63·79
Months—							
1	106,564	748	·99298	·00702	106,190	6,815,802	63·96
2	105,816	695	·99343	·00657	105,408	6,806,953	64·33
3	105,121	502	·99522	·00478	104,870	6,798,164	64·67
4	104,619	421	·99598	·00402	104,408	6,789,425	64·90
5	104,198	365	·99650	·00350	104,016	6,780,724	65·08
6	103,833	323	·99689	·00311	103,672	6,772,056	65·22
7	103,510	281	·99729	·00271	103,370	6,763,417	65·34
8	103,229	252	·99756	·00244	103,103	6,754,803	65·44
9	102,977	234	·99773	·00227	102,860	6,746,211	65·51
10	102,743	192	·99813	·00187	102,647	6,737,639	65·58
11	102,551	162	·99842	·00158	102,470	6,729,085	65·62
Years—							
1	102,389	1,169	·98858	·01142	101,804	6,720,546	65·04
2	101,220	531	·99475	·00525	100,954	6,618,742	65·39
3	100,689	398	·99605	·00395	100,490	6,517,788	64·73
4	100,291	291	·99710	·00290	100,146	6,417,298	63·99
5	100,000	–	–	–	–	6,317,152	63·17

TABLE 3. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, taking births as published

Age x	Maritime Provinces						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	112,978	1,719	·98478	·01522	112,118	6,750,182	69·75
1-2	111,259	476	·99572	·00428	111,021	6,749,874	60·67
2-3	110,783	500	·99549	·00451	110,533	6,749,570	60·93
3-4	110,283	336	·99695	·00305	110,115	6,749,267	61·20
4-5	109,947	261	·99753	·00237	109,816	6,748,965	61·38
5-6	109,686	139	·99873	·00127	109,616	6,748,065	61·63
6	109,547	140	·99872	·00128	109,477	6,748,365	61·60
Weeks—							
1	109,407	542	·99505	·00495	109,136	6,748,064	61·68
2	108,855	388	·99644	·00356	108,671	6,745,971	61·97
3	108,477	340	·99687	·00313	108,307	6,743,887	62·17
Months—							
1	108,137	1,072	·99009	·00991	107,601	6,741,316	62·34
2	107,055	921	·99140	·00860	106,604	6,732,349	62·88
3	106,144	714	·99327	·00673	105,787	6,723,465	03·34
4	105,430	518	·99509	·00491	105,171	6,714,650	63·69
5	104,912	454	·99557	·00433	104,685	6,705,886	63·92
6	104,458	348	·99667	·00333	104,284	6,697,162	64·11
7	104,110	333	·99680	·00320	103,944	6,688,471	64·24
8	103,777	284	·99726	·00274	103,035	6,679,809	64·37
9	103,493	290	·99720	·00280	103,348	6,671,173	64·46
10	103,203	245	·99763	·00237	103,080	6,662,661	64·66
11	102,958	214	·99792	·00208	102,851	6,653,971	64·63
Years—							
1	102,744	1,341	·98695	·01305	102,074	6,645,400	64·68
2	101,403	538	·99371	·00529	101,084	6,543,325	64·53
3	100,765	435	·99568	·00432	100,648	6,442,242	63·93
4	100,330	330	·99571	·00329	100,165	6,341,694	63·21
5	100,000	–	–	–	–	6,241,629	62·42
FEMALES							
Days—							
0-1	110,685	1,265	·98856	·01144	109,952	6,805,875	61·54
1-2	109,320	407	·99628	·00372	109,116	6,805,574	62·25
2-3	108,913	322	·99704	·00296	108,752	6,805,275	62·48
3-4	108,591	253	·99767	·00233	108,464	6,804,977	62·67
4-5	108,338	167	·99846	·00154	108,254	0,804,680	62·81
5-6	108,171	104	·99904	·00096	108,119	6,804,383	62·90
6	108,067	85	·99921	·00079	108,024	0,804,087	62·96
Weeks—							
1	107,982	547	·99493	·00507	107,708	8,803,791	63·01
2	107,435	323	·99699	·00301	107,274	6,801,725	63·31
3	107,112	325	·99697	·00303	106,950	6,799,668	63·48
Months—							
1	106,787	718	·99328	·00672	106,428	6,797,139	63·65
2	106,059	632	·99404	·00596	105,753	6,788,270	04·00
3	105,437	544	·99484	·00516	105,165	6,779,458	64·30
4	104,893	465	·99557	·00443	104,660	6,770,594	64·55
5	104,428	368	·99648	·00352	104,244	6,761,972	64·75
6	104,050	279	·99732	·00268	103,920	6,753,285	64·90
7	103,781	349	·99664	·00336	103,606	6,744,625	64·99
8	103,432	301	·99709	·00291	103,282	6,735,991	05·12
9	103,131	253	·99745	·00255	103,000	6,727,384	05·23
10	102,868	149	·99855	·00145	102,794	6,718,801	65·31
11	102,719	190	·99815	·00185	102,605	6,710,235	6o·33
Years—							
1	102,529	1,291	·98741	·01259	101,884	6,701,685	65·36
2	101,238	550	·99447	·00553	100,958	6,599,801	65·19
3	100,678	423	·99580	·00420	100,465	6,498,843	64·55
4	100,255	255	·99746	·00254	100,128	6,398,377	63·82
5	100,000	–	–	–	–	6,298,249	62·98

TABLE 3. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, taking births as published—Con.

Age x	Quebec						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}x$
MALES							
Days—							
0-1	118,329	2,275	·98077	·01923	117,192	6,588,676	55·68
1-2	116,054	634	·99454	·00546	115,737	6,588,355	56·77
2-3	115,420	510	·99558	·00442	115,165	6,588,038	57·08
3-4	114,910	340	·99704	·00296	114,740	6,587,722	57·33
4-5	114,570	215	·99812	·00188	114,462	6,587,408	57·50
5-6	114,355	186	·99837	·00153	114,262	6,587,094	57·60
6	114,169	161	·99859	·00141	114,088	6,586,781	57·69
Weeks—							
1	114,008	873	·99234	·00766	113,572	6,585,469	57·77
2	113,135	615	·99455	·00544	112,828	6,584,290	58·20
3	112,520	572	·99492	·00508	112,234	6,582,126	58·50
Months—							
1	111,948	1,569	·98599	·01401	111,164	6,579,473	58·77
2	110,379	1,353	·98774	·01226	109,702	6,570,209	59·52
3	109,026	935	·99142	·00858	108,558	6,551,067	60·18
4	108,091	777	·99281	·00719	107,702	6,552,021	60·62
5	107,314	700	·99348	·00652	105,904	6,543,046	50·97
6	106,614	583	·99453	·00547	106,322	6,534,132	61·29
7	106,031	506	·99523	·00477	105,778	6,525,272	61·54
8	105,525	460	·99564	·00436	105,295	6,516,457	61·75
9	105,065	434	·99587	·00413	104,848	6,507,682	61·94
10	104,531	343	·99672	·00328	104,460	6,498,945	62·11
11	104,288	299	·99713	·00287	104,138	6,490,240	62·23
Years—							
1	103,989	1,969	·98107	·01893	103,004	6,481,562	62·33
2	102,020	954	·99065	·00935	101,543	6,378,558	62·52
3	101,065	614	·99392	·00608	100,759	6,277,015	62·11
4	100,452	452	·99550	·00450	100,225	0,176,256	61·48
5	100,000	-	-	-	-	6,075,030	60·70
FEMALES							
Days—							
0-1	114,659	1,563	·98637	·01363	113,878	6,579,912	57·38
1-2	113,096	521	·99539	·00461	112,836	6,579,600	58·18
2-3	112,575	368	·99673	·00327	112,391	6,579,290	58·44
3-4	112,207	266	·99763	·00237	112,074	6,578,982	58·63
4-5	111,941	156	·99861	·00139	111,863	6,578,675	58·77
5-0	111,785	125	·99888	·00112	111,722	6,578,359	58 85
6	111,650	109	·99902	·00098	111,606	6,578,063	58·91
Weeks—							
1	111,551	666	·99403	·00597	111,218	5,577,757	58·96
2	110,885	532	·99520	·00480	110,619	6,575,624	59·30
3	110,353	469	·99575	·00425	110,118	6,573,502	59·57
Months—							
1	109,884	1,135	·98966	·01034	109,316	6,570,899	59·80
2	108,748	1,150	·98942	·01058	108,173	6,561,789	60·34
3	107,598	735	·99317	·00683	107,230	6,552,775	60·90
4	106,863	627	·99413	·00587	106,550	6,543,839	61·23
5	106,235	548	·99484	·00516	105,962	6,534,950	61·51
6	105,688	489	·99537	·00463	105,444	6,525,130	51·75
7	105,199	389	·99630	·00370	105,004	6,517,343	61·95
8	104,810	357	·99650	·00350	104,626	6,508,592	62·10
9	104,443	334	·99680	·00320	104,276	5,499,874	62·23
10	104,109	297	·99715	·00285	103,960	6,491,184	52·35
11	103,812	248	·99761	·00239	103,688	6,482,521	62·44
Years—							
1	103,564	1,784	·98277	·01723	102,672	6,473,880	62·51
2	101,780	778	·99235	·00764	101,391	6,371,208	62·60
3	101,002	557	·99439	·00561	100,718	5,269,817	62·08
4	100,435	435	·99567	·00433	100,218	6,169,099	61·42
5	100,000	-	-	-	-	6,068,881	60·69

TABLE 3. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, taking births as published—Con.

Age x	Ontario						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	110,231	1,823	·98346	·01654	109,320	6,726,019	61·02
1-2	108,408	526	·99515	·00485	108,145	6,725,720	62·04
2-3	107,882	409	·99621	·00379	107,678	6,725,423	62·34
3-4	107,473	300	·99721	·00279	107,323	6,725,128	62·57
4-5	107,173	185	·99827	·00173	107,080	6,724,834	02·75
5-6	106,988	136	·99873	·00127	106,920	6,724,541	62·85
6	106,852	89	·99917	·00083	106,808	6,724,248	62·93
Weeks—							
1	106,763	474	·99556	·00444	106,526	6,723,955	62·98
2	106,289	334	·99686	·00314	106,122	6,721,912	63·24
3	105,955	295	·99721	·00279	105,778	6,719,877	63·42
Months—							
1	105,660	676	·99360	·00640	105,322	6,717,376	63·58
2	104,984	552	·99474	·00526	104,708	6,708,599	63·90
3	104,432	455	·99564	·00436	104,204	6,699,874	64·16
4	103,977	373	·99641	·00359	103,790	6,691,190	64·35
5	103,604	345	·99667	·00333	103,432	6,682,541	64·50
6	103,259	325	·99685	·00315	103,098	6,673,921	64·63
7	102,934	268	·99740	·00260	102,800	6,655,330	64·75
8	102,666	231	·99775	·00225	102,550	6,656,763	64·84
9	102,435	226	·99779	·00221	102,322	6,648,218	64·90
10	102,209	159	·99844	·00156	102,130	6,639,691	64·96
11	102,050	148	·99855	·00145	101,976	6,631,180	64·98
Years—							
1	101,902	919	·99098	·00902	101,442	6,622,682	64·99
2	100,983	439	·99565	·00435	100,764	6,521,240	64·58
3	100,544	315	·99687	·00313	100,386	6,420,476	63·80
4	100,229	229	·99772	·00228	100,114	6,320,090	63·06
5	100,000	–	–	–	–	6,219,976	62·20
FEMALES							
Days—							
0-1	108,214	1,415	·98692	·01308	107,506	6,891,281	03·08
1-2	106,799	399	·99626	·00374	106,600	6,890,986	64·52
2-3	106,400	298	·99720	·00280	106,251	6,890,694	64·76
3-4	106,102	205	·99807	·00193	106,000	6,890,403	64·94
4-5	105,897	141	·99867	·00133	105,826	6,890,113	65·06
5-6	105,756	116	·99890	·00110	105,698	6,889,823	65·15
6	105,040	90	·99915	·00085	105,595	6,889,533	05·22
Weeks—							
1	105,550	378	·99642	·00358	105,361	6,889,244	65·27
2	105,172	258	·99755	·00245	105,043	6,887,223	65·48
3	104,014	251	·99761	·00239	104,788	6,885,209	65·63
Months—							
1	104,663	525	·99498	·00502	104,400	6,882,731	65·76
2	104,138	442	·99576	·00424	103,917	6,874,031	66·01
3	103,696	353	·99660	·00340	103,520	6,865,372	66·20
4	103,343	307	·99703	·00297	103,190	6,856,745	66·35
5	103,036	277	·99730	·00269	102,898	6,848,146	66·46
6	102,759	268	·99739	·00261	102,625	6,839,571	66·56
7	102,491	221	·99784	·00216	102,380	6,831,019	06·65
8	102,270	195	·99809	·00191	102,172	6,822,487	66·71
9	102,075	178	·99826	·00174	101,986	6,813,973	66·75
10	101,897	141	·99862	·00138	101,826	6,805,474	66·79
11	101,756	120	·99882	·00118	101,696	6,790,989	60·80
Years—							
1	101,636	810	·99203	·00797	101,231	6,788,514	60·79
2	100,826	368	·99635	·00365	100,642	6,687,283	66·32
3	100,458	257	·99744	·00256	100,330	6,586,641	65·56
4	100,201	201	·99799	·00201	100,100	6,486,311	04·73
5	100,000	–	–	–	–	6,386,211	63·86

TABLE 3. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, taking births as published—Con.

Age x	Prairie Provinces						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	110,020	1,780	·98382	·01618	109,130	6,950,516	63·18
1-2	108,240	394	·99636	·00364	108,043	6,950,217	64·21
2-3	107,846	358	·99668	·00332	107,667	6,949,921	64·44
3-4	107,488	240	·99777	·00223	107,368	6,949,626	64·66
4-5	107,248	189	·99824	·00176	107,154	6,949,332	64·80
5-6	107,059	134	·99875	·00125	106,992	6,949,038	64·91
6	106,925	99	·99907	·00093	106,876	6,948,745	64·99
Weeks—							
1	100,826	526	·99508	·00492	106,563	6,948,452	65·04
2	106,300	391	·99632	·00368	106,104	6,946,408	65·35
3	105,909	306	·99711	·00289	105,756	6,944,373	65·67
Months—							
1	105,603	755	·99285	·00715	105,226	6,941,873	65·74
2	104,848	614	·99414	·00586	104,541	6,933,104	66·12
3	104,234	475	·99544	·00456	103,996	6,924,302	66·43
4	103,759	407	·99608	·00392	103,556	6,915,726	66·65
5	103,352	294	·99716	·00284	103,205	6,907,096	66·83
6	103,058	240	·99767	·00233	102,938	6,898,496	66·94
7	102,818	246	·99761	·00239	102,695	6,889,918	67·01
8	102,572	187	·99818	·00182	102,478	6,881,360	67·09
9	102,385	176	·99828	·00172	102,297	6,872,820	67·13
10	102,209	155	·99848	·00152	102,132	6,864,295	67·16
11	102,054	129	·99873	·00127	101,990	6,855,784	67·18
Years—							
1	101,925	863	·99153	·00847	101,494	6,847,285	67·18
2	101,062	475	·99530	·00470	100,824	6,745,791	66·75
3	100,587	351	·99651	·00349	100,412	6,644,967	66·06
4	100,236	236	·99765	·00235	100,118	6,544,555	65·29
5	100,000	–	–	–	–	6,444,437	64·44
FEMALES							
Days—							
0-1	107,925	1,339	·98759	·01241	107,256	7,042,172	65·25
1-2	106,586	312	·99707	·00293	106,430	7,041,878	66·07
2-3	100,274	261	·99754	·00246	106,144	7,041,587	66·26
3-4	106,013	170	·99840	·00160	105,928	7,041,296	66·42
4-5	105,843	133	·99874	·00126	105,776	7,041,006	66·52
5-6	105,710	100	·99905	·00095	105,660	7,040,716	66·60
6	105,610	95	·99910	·00090	105,562	7,040,426	66·66
Weeks—							
1	105,515	405	·99616	·00384	105,312	7,040,137	66·72
2	105,110	293	·99721	·00279	104,964	7,038,117	66·96
3	104,817	242	·99769	·00231	104,696	7,036,104	67·13
Months—							
1	104,575	548	·99476	·00524	104,301	7,033,629	67·26
2	104,027	456	·99562	·00438	103,799	7,024,937	67·53
3	103,571	396	·99618	·00382	103,373	7,016,287	67·74
4	103,175	299	·99710	·00290	103,026	7,007,673	67·92
5	102,876	254	·99753	·00247	102,749	6,099,087	68·03
6	102,622	201	·99804	·00196	102,522	6,990,525	68·12
7	102,421	183	·99821	·00179	102,330	6,981,981	68·17
8	102,238	155	·99848	·00152	102,160	6,973,454	68·21
9	102,083	165	·99838	·00162	102,000	6,964,940	68·23
10	101,918	135	·99867	·00133	101,850	6,956,440	68·26
11	101,783	96	·99906	·00094	101,735	6,947,953	68·26
Years—							
1	101,687	764	·99249	·00751	101,305	6,939,475	68·24
2	100,923	404	·99600	·00400	100,721	6,838,170	67·76
3	100,519	312	·99690	·00310	100,363	6,737,449	67·03
4	100,207	207	·99793	·00207	100,104	6,637,086	66·23
5	100,000	–	–	–	–	6,536,982	65·37

TABLE 3. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, taking births as published—Con.

Age x	British Columbia						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	107,951	1,226	·98864	·01136	107,338	6,684,641	61·92
1-2	106,725	388	·99636	·00364	106,531	6,684,347	62·63
2-3	106,337	341	·99679	·00321	106,166	6,684,055	62·86
3-4	105,996	228	·99785	·00215	105,882	6,683,764	63·06
4-5	105,768	127	·99880	·00120	105,704	6,683,474	63·19
5-6	105,641	94	·99911	·00089	105,594	6,683,184	63·26
6	105,547	86	·99918	·00082	105,504	6,682,895	63·32
Weeks—							
1	105,461	308	·99708	·00292	105,307	6,682,606	63·37
2	105,153	181	·99828	·00172	105,062	6,680,586	63·53
3	104,972	208	·99802	·00198	104,868	6,678,571	63·62
Months—							
1	104,764	408	·99611	·00389	104,660	6,676,092	63·73
2	104,356	348	·99667	·00333	104,182	6,667,379	63·89
3	104,008	420	·99596	·00404	103,798	6,658,097	64·02
4	103,588	320	·99691	·00309	103,428	6,650,047	64·20
5	103,268	239	·99768	·00232	103,148	6,641,428	64·31
6	103,029	253	·99764	·00246	102,902	6,632,833	64·38
7	102,776	140	·99864	·00136	102,706	6,624,258	64·45
8	102,636	119	·99884	·00116	102,576	6,615,699	64·46
9	102,517	213	·99792	·00208	102,410	6,607,151	64·45
10	102,304	113	·99890	·00110	102,248	6,598,617	64·60
11	102,191	133	·99870	·00130	102,124	6,590,096	64·49
Years—							
1	102,058	834	·99183	·00817	101,641	6,581,586	64·49
2	101,224	495	·99511	·00489	100,976	6,479,945	64·02
3	100,729	414	·99589	·00411	100,522	6,378,969	63·33
4	100,315	315	·99686	·00314	100,158	6,278,447	62·59
5	100,000	–	–	–	–	6,178,289	01·78
FEMALES							
Days—							
0-1	106,535	1,046	·99018	·00982	106,012	6,940,160	65·14
1-2	105,489	291	·99724	·00276	105,344	6,939,860	65·79
2-3	105,198	263	·99750	·00250	105,067	6,939,571	65·96
3-4	104,935	146	·99861	·00139	104,862	6,939,283	66·13
4-5	104,789	132	·99874	·00126	104,723	6,938,996	66·22
6-6	104,657	65	·99947	·00053	104,030	6,938,709	66·30
6	104,602	63	·99940	·00060	104,671	6,938,422	06·33
Weeks—							
1	104,539	193	·99815	·00185	104,443	6,938,136	66·37
2	104,346	90	·99914	·00086	104,301	6,936,133	66·47
3	104,256	131	·99874	·00126	104,191	6,934,132	66·61
Months—							
1	104,125	408	·99608	·00392	103,921	6,931,669	66·57
2	103,717	353	·99660	·00340	103,541	6,923,009	66·75
3	103,364	227	·99780	·00220	103,251	0,914,381	66·89
4	103,137	172	·99833	·00167	103,051	6,905,777	66·96
5	102,965	151	·99853	·00147	102,890	6,897,189	66·98
6	102,814	173	·99832	·00168	102,728	6,888,615	67·00
7	102,641	213	·99792	·00208	102,535	6,880,054	67·03
8	102,428	166	·99838	·00162	102,345	6,871,510	67·09
9	102,262	144	·99859	·00141	102,190	6,862,981	67·11
10	102,118	138	·99865	·00135	102,049	6,854,465	67·12
11	101,980	83	·99919	·00081	101,939	6,845,961	67·13
Years—							
1	101,897	791	·99224	·00776	101,502	6,837,466	67·10
2	101,106	368	·99636	·00364	100,922	6,735,964	66·62
3	100,738	439	·99564	·00436	100,519	6,635,042	65·86
4	100,299	299	·99702	·00298	100,150	6,534,623	65·16
5	100,000	–	–	–	–	0,434,373	64·34

TABLE 4. Canadian Life Table for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, adding five p.c. to births as published to allow for incompleteness of registration

Age x	Canada						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	112,318	1,818	·98381	·01619	111,409	6,738,607	60·00
1-2	110,500	491	·99556	·00444	110,254	6,738,302	60·98
2-3	110,009	413	·99625	·00375	109,802	6,738,000	61·25
3-4	109,596	283	·99742	·00258	109,454	6,737,699	61·48
4-5	109,313	190	·99826	·00174	109,218	0,737,399	61·63
5-0	109,123	142	·99870	·00130	109,052	6,737,100	61·74
6	108,981	113	·99896	·00104	108,924	6,736,801	61·82
Weeks—							
1	108,868	583	·99464	·00536	108,576	6,736,503	61·88
2	108,285	414	·99618	·00382	108,078	6,734,415	62·19
3	107,871	367	·99660	·00340	107,688	6,732,337	62·41
Months—							
1	107,504	960	·99107	·00893	107,024	6,729,681	62·60
2	106,544	811	·99239	·00761	106,138	6,720,762	63·08
3	105,733	608	·99425	·00575	105,429	6,711,917	63·48
4	105,125	496	·99528	·00472	104,877	6,703,131	63·76
5	104,629	431	·99588	·00412	104,414	6,694,391	63·98
6	104,198	368	·99647	·00353	104,014	6,685,690	64·16
7	103,830	323	·99689	·00311	103,668	6,677,022	64·31
8	103,507	280	·99729	·00271	103,367	6,668,383	64·42
9	103,227	273	·99736	·00264	103,090	6,659,769	64·52
10	102,954	212	·99793	·00206	102,848	6,651,178	64·60
11	102,742	190	·99815	·00185	102,647	6,642,807	64·65
Years—							
1	102,552	1,217	·98813	·01187	101,944	6,634,053	64·69
2	101,335	604	·99404	·00596	101,033	6,532,109	64·46
3	100,731	414	·99589	·00411	100,524	6,431,076	63·84
4	100,317	317	·99684	·00316	100,158	6,330,552	63·11
5	100,000	–	–	–	–	6,230,394	62·30
FEMALES							
Days—							
0-1	100,891	1,337	·98783	·01217	109,223	6,824,290	62·10
1-2	108,554	394	·99637	·00363	108,357	6,823,991	62·86
2-3	108,160	296	·99726	·00274	108,012	6,823,694	63·09
3-4	107,864	208	·99807	·00193	107,760	6,823,398	63·26
4-5	107,656	138	·99872	·00128	107,587	6,823,103	63·38
5-6	107,518	105	·99902	·00098	107,466	6,822,808	63·46
6	107,413	91	·99915	·00085	107,368	6,822,514	63·52
Weeks—							
1	107,322	462	·99570	·00430	107,091	3,822,220	63·57
2	106,860	336	·99686	·00314	106,692	6,820,161	63·83
3	106,524	305	·99714	·00286	106,372	6,818,109	64·01
Months—							
1	106,219	707	·99343	·00666	105,866	6,815,486	64·17
2	105,512	657	·99377	·00623	105,184	6,806,664	64·51
3	104,855	475	·99547	·00453	104,618	6,797,899	64·83
4	104,380	398	·99619	·00381	104,181	6,789,181	65·04
5	103,982	345	·99668	·00332	103,810	6,780,500	65·21
0	103,637	305	·99706	·00294	103,485	6,771,850	65·34
7	103,332	265	·99744	·00256	103,200	0,763,227	65·45
8	103,067	239	·99768	·00232	102,948	6,754,627	65·54
9	102,828	220	·99786	·00214	102,718	6,746,048	65·61
10	102,608	182	·99823	·00177	102,517	6,737,489	65·66
11	102,426	152	·99852	·00148	102,350	6,728,946	65·70
Years—							
1	102,274	1,105	·98920	·01080	101,722	6,720,417	65·71
2	101,169	502	·99504	·00496	100,918	6,618,695	65·42
3	100,667	376	·99626	·00374	100,479	6,517,777	64·75
4	100,291	291	·99710	·00290	100,146	6,417,298	63·99
5	100,000	–	–	–	–	6,317,152	63·17

TABLE 5. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, adding five p.c. to births as published to allow for incompleteness of registration

Age x	Maritime Provinces						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	112,117	1,621	·98554	·01446	111,306	6,749,798	60·20
1-2	110,496	448	·99595	·00405	110,272	6,749,493	61·08
2-3	110,048	471	·99572	·00428	109,812	6,749,191	61·33
3-4	109,577	316	·99712	·00288	109,419	6,748,890	61·59
4-5	109,261	246	·99775	·00225	109,138	6,748,590	61·77
5-6	109,015	131	·99880	·00120	108,950	6,748,291	61·90
6	108,884	131	·99880	·00120	108,818	6,747,992	61·97
Weeks—							
1	108,753	508	·99533	·00467	108,499	6,747,694	62·05
2	108,245	362	·99666	·00334	108,064	6,745,608	62·32
3	107,883	317	·99706	·00294	107,724	6,743,530	62·51
Months—							
1	107,566	999	·99071	·00929	107,060	6,740,874	62·67
2	106,567	856	·99197	·00803	106,139	6,731,952	63·17
3	105,711	662	·99374	·00626	105,380	6,723,107	63·60
4	105,049	476	·99547	·00453	104,811	6,714,326	63·92
5	104,573	417	·99601	·00399	104,364	6,705,592	64·12
6	104,156	316	·99697	·00303	103,998	6,696,895	64·30
7	103,840	303	·99708	·00292	103,688	6,688,229	64·41
8	103,537	257	·99752	·00248	103,408	6,679,589	64·51
9	103,280	262	·99746	·00254	103,149	6,670,972	64·59
10	103,018	220	·99786	·00214	102,908	6,662,377	64·67
11	102,798	191	·99814	·00186	102,702	6,653,802	64·73
Years—							
1	102,607	1,265	·98767	·01233	101,974	6,045,244	64·70
2	101,342	602	·99406	·00594	101,041	6,543,270	64·57
3	100,740	410	·99593	·00407	100,535	6,442,229	63·95
4	100,330	330	·99671	·00329	100,165	6,341,694	63·21
5	100,000	–	–	–	–	6,241,529	62·42
FEMALES							
Days—							
0-1	109,925	1,194	·98914	·01086	109,328	6,805,580	61·91
1-2	108,731	384	·99647	·00353	108,539	6,805,280	62·59
2-3	108,347	304	·99719	·00281	108,195	6,804,983	62·81
3-4	108,043	239	·99779	·00221	107,924	6,804,687	62·98
4-5	107,804	157	·99854	·00146	107,726	6,804,391	63·12
5-6	107,647	99	·99908	·00092	107,598	6,804,096	63·21
6	107,548	80	·99926	·00074	107,508	6,803,801	63·26
Weeks—							
1	107,468	516	·99520	·00480	107,210	6,803,506	63·31
2	106,952	303	·99717	·00283	106,800	6,801,444	63·60
3	106,649	304	·99715	·00285	106,497	6,799,390	63·76
Months—							
1	106,345	670	·99370	·00630	106,010	6,796,764	63·91
2	105,675	590	·99442	·00558	105,380	6,787,930	64·24
3	105,085	507	·99518	·00482	104,832	6,779,149	64·51
4	104,578	431	·99588	·00412	104,362	6,770,413	64·74
5	104,147	340	·99674	·00326	103,977	6,761,717	64·93
6	103,807	256	·99753	·00247	103,679	6,753,053	65·05
7	103,551	322	·99689	·00311	103,390	6,744,413	65·13
8	103,229	277	·99732	·00268	103,090	6,735,798	65·25
9	102,952	241	·99766	·00234	102,832	6,727,208	65·34
10	102,711	134	·99870	·00130	102,644	6,718,639	65·14
11	102,577	173	·99831	·00169	102,490	6,710,086	65·42
Years—							
1	102,404	1,220	·98809	·01191	101,794	6,701,546	65·44
2	101,184	529	·99477	·00523	100,920	6,599,752	65·23
3	100,655	400	·99603	·00397	100,455	6,498,832	64·57
4	100,255	255	·99746	·00254	100,128	6,398,377	63·82
5	100,000	–	–	–	–	6,298,249	62·98

TABLE 5. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, adding five p.c. to births as published to allow for incompleteness of registration—Con.

Age x	Quebec						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	117,254	2,142	·98173	·01827	116,183	6,588,096	56·19
1-2	116,112	596	·99482	·00518	114,814	0,587,778	57·23
2-3	114,515	481	·99580	·00420	114,276	6,587,463	57·63
3-4	114,035	320	·99719	·00281	113,876	5,587,150	57·77
4-5	113,715	202	·99822	·00178	113,614	6,586,838	57·93
5-6	113,513	175	·99846	·00154	113,426	6,586,527	58·03
6	113,338	152	·99866	·00134	113,262	5,585,216	58·11
Weeks—							
1	113,186	821	·99275	·00725	112,776	6,585,906	58·19
2	112,365	579	·99485	·00515	112,076	6,583,737	58·59
3	111,786	537	·99520	·00480	111,518	6,581,582	58·88
Months—							
1	111,249	1,474	·98675	·01325	110,512	6,578,832	59·14
2	109,775	1,272	·98841	·01159	109,139	6,569,623	59·85
3	108,503	878	·99191	·00809	108,064	6,560,528	60·46
4	107,625	730	·99322	·00678	107,260	6,551,523	60·87
5	106,895	557	·99385	·00615	106,567	6,542,585	61·21
6	106,238	547	·99485	·00515	105,964	6,533,705	61·50
7	105,591	473	·99552	·00448	105,454	6,524,875	01·74
8	105,218	432	·99589	·00411	105,002	6,516,088	61·93
9	104,786	406	·99613	·00387	104,583	6,507,388	62·10
10	104,380	321	·99692	·00308	104,220	6,498,573	62·26
11	104,059	280	·99731	·00269	103,919	6,489,988	62·37
Years—							
1	103,779	1,852	·98215	·01785	102,853	6,481,328	62·45
2	101,927	897	·99120	·00880	101,478	6,378,476	62·58
3	101,030	578	·99428	·00572	100,741	6,276,997	52·13
4	100,452	452	·99550	·00450	100,226	6,176,256	61·49
5	100,000	-	-	-	-	6,076,030	60·76
FEMALES							
Days—							
0-1	113,835	1,473	·98706	·01294	113,098	6,679,492	57·80
1-2	112,362	492	·99562	·00438	112,116	6,579,182	68·55
2-3	111,870	346	·99691	·00309	111,697	6,578,875	58·81
3-4	111,524	261	·99775	·00226	111,398	6,578,569	68·99
4-5	111,273	147	·99868	·00132	111,200	6,578,264	59·12
6-6	111,120	118	·99894	·00106	111,067	6,677,969	59·19
6	111,008	103	·99907	·00093	110,956	6,577,655	69·25
Weeks—							
1	110,905	628	·99434	·00566	110,691	6,577,351	69·30
2	110,277	501	·99546	·00454	110,026	6,575,224	59·62
3	109,776	441	·99598	·00402	109,656	6,673,108	59·88
Months—							
1	109,335	1,071	·99020	·00980	108,800	6,570,406	60·09
2	108,264	1,084	·98999	·01001	107,722	6,561,340	60·60
3	107,180	691	·99355	·00645	106,834	6,552,364	61·13
4	106,489	591	·99445	·00555	106,194	6,543,452	61·45
5	105,898	516	·99513	·00487	105,640	6,534,613	61·71
6	105,382	461	·99563	·00437	105,152	6,526,810	61·92
7	104,922	366	·99651	·00349	104,739	6,517,048	62·11
8	104,555	345	·99570	·00330	104,384	6,508,320	62·25
9	104,211	315	·99598	·00302	104,054	6,499,622	62·37
10	103,896	279	·99731	·00259	103,755	5,490,951	62·47
11	103.517	233	·99775	·00225	103,500	6,482,305	62·56
Years—							
1	103,384	1,682	·98373	·01627	102,543	6,473,680	62·62
2	101,702	733	·99279	·00721	101,336	6,371,137	52·64
3	100,969	534	·99471	·00529	100,702	6,259,801	62·10
4	100,435	435	·99567	·00433	100,218	6,169,099	61·42
6	100,000	-	-	-	-	6,058,881	60·59

TABLE 5. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, adding five p.c. to births as published to allow for incompleteness of registration—Con.

Age x	Ontario						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	109,722	1,724	·98429	·01571	108,860	6,725,865	61·30
1-2	107,998	498	·99539	·00461	107,749	6,725,567	62·28
2-3	107,500	386	·99641	·00359	107,307	6,725,272	62·56
3-4	107,114	284	·99735	·00265	106,972	6,724,978	62·78
4-5	106,830	176	·99835	·00165	106,742	6,724,685	62·95
5-6	105,654	129	·99879	·00121	106,590	6,724,393	63·05
6	106,525	83	·99922	·00078	106,484	6,724,101	63·12
Weeks—							
1	106,442	449	·99578	·00422	106,218	6,723,809	63·17
2	105,993	316	·99702	·00298	105,835	6,721,766	63·42
3	105,577	280	·99735	·00265	105,537	6,719,731	63·59
Months—							
1	105,397	642	·99391	·00609	105,076	6,717,128	63·73
2	104,755	525	·99499	·00501	104,492	6,708,372	64·04
3	104,230	434	·99584	·00416	104,013	5,699,665	64·28
4	103,796	356	·99657	·00343	103,618	6,690,998	64·46
5	103,440	329	·99682	·00318	103,276	6,682,364	64·60
6	103,111	311	·99698	·00302	102,956	6,673,758	64·72
7	102,800	256	·99751	·00249	102,672	6,565,179	64·84
8	102,544	221	·99784	·00216	102,434	6,656,623	64·92
9	102,323	217	·99788	·00212	102,214	6,648,087	64·97
10	102,106	154	·99849	·00151	102,029	5,639,570	65·03
11	101,952	142	·99861	·00139	101,881	6,631,068	65·04
Years—							
1	101,810	868	·99147	·00853	101,376	6,622,578	65·05
2	100,942	415	·99589	·00411	100,734	6,521,202	64·60
3	100,527	298	·99704	·00296	100,378	6,420,468	63·87
4	100,229	229	·99772	·00228	100,114	6,320,090	63·06
5	100,000	–	–	–	–	6,219,976	62·20
FEMALES							
Days—							
0-1	107,803	1,340	·98757	·01243	107,133	6,891,167	63·92
1-2	106,463	377	·99645	·00354	106,275	6,890,873	64·73
2-3	105,085	283	·99733	·00267	105,944	6,890,582	64·95
3-4	105,803	193	·99818	·00182	105,706	6,890,292	65·12
4-5	105,610	134	·99873	·00127	105,543	6,890,002	65·24
5-6	105,476	110	·99895	·00104	105,421	6,889,713	65·32
6	105,366	85	·99919	·00081	105,324	6,889,424	65·38
Weeks—							
1	105,281	359	·99659	·00341	105,102	6,889,135	65·44
2	104,922	244	·99767	·00233	104,800	6,887,114	65·64
3	104,678	238	·99773	·00227	104,559	6,885,099	65·77
Months—							
1	104,440	499	·99522	·00478	104,190	6,882,521	65·90
2	103,941	419	·99597	·00403	103,732	6,873,839	66·13
3	103,522	335	·99675	·00324	103,354	6,865,195	66·32
4	103,187	292	·99717	·00283	103,041	6,856,583	66·45
5	102,895	254	·99743	·00257	102,763	6,847,997	66·55
6	102,631	255	·99752	·00248	102,504	6,839,434	66·64
7	102,375	211	·99794	·00206	102,270	6,830,892	66·72
8	102,165	186	·99818	·00182	102,072	6,822,370	66·78
9	101,979	170	·99833	·00167	101,894	6,813,864	66·82
10	101,809	135	·99867	·00133	101,742	6,805,373	66·84
11	101,674	115	·99887	·00113	101,616	6,796,895	66·85
Years—							
1	101,559	767	·99245	·00755	101,176	6,788,427	66·84
2	100,792	348	·99655	·00345	100,018	6,687,251	06·35
3	100,444	243	·99758	·00242	100,322	6,586,633	65·57
4	100,201	201	·99799	·00201	100,100	6,486,311	64·73
5	100,000	–	–	–	–	6,386,211	63·86

TABLE 5. Life Tables for regional divisions of Canada for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, adding five p.c. to births as published to allow for incompleteness of registration—Con.

Age x	Prairie Provinces						
	l_x	d_x	p_x	q_x	L_x	T_x	e_x
MALES							
Days—							
0-1	109,500	1,684	·98462	·01538	108,658	6,950,352	63·47
1-2	107,816	372	·99655	·00345	107,630	6,950,054	64·46
2-3	107,444	338	·99685	·00315	107,275	6,949,759	64·68
3-4	107,106	227	·99788	·00212	106,992	6,949,465	64·89
4-5	106,879	179	·99833	·00167	106,790	6,949,172	65·02
5-6	106,700	126	·99882	·00118	106,637	6,948,879	65·13
6	106,574	95	·99911	·00089	106,526	6,948,587	65·20
Weeks—							
1	106,479	497	·99533	·00467	106,230	6,948,295	65·26
2	105,982	370	·99651	·00349	105,797	6,946,252	65·54
3	105,612	290	·99725	·00275	105,467	6,944,218	65·75
Months—							
1	105,322	715	·99321	·00679	104,964	6,941,617	65·91
2	104,607	582	·99444	·00556	104,316	6,932,870	66·28
3	104,025	450	·99567	·00433	103,800	6,924,177	66·56
4	103,575	385	·99628	·00372	103,382	6,915,527	66·77
5	103,190	279	·99730	·00270	103,050	6,906,912	66·94
6	102,911	228	·99778	·00222	102,797	6,898,325	67·03
7	102,683	233	·99773	·00227	102,566	6,889,759	67·10
8	102,450	178	·99826	·00174	102,361	6,881,212	67·17
9	102,272	167	·99837	·00163	102,188	6,872,682	67·20
10	102,105	148	·99855	·00145	102,031	6,864,167	67·23
11	101,957	124	·99878	·00122	101,895	0,855,665	67·24
Years—							
1	101,833	816	·99199	·00801	101,425	6,847,174	67·24
2	101,017	449	·99556	·00444	100,792	6,745,749	66·78
3	100,568	332	·99670	·00330	100,402	6,644,957	66·08
4	100,236	236	·99765	·00235	100,118	6,544,555	65·29
5	100,000	-	-	-	-	6,444,437	64·45
FEMALES							
Days—							
0-1	107,522	1,268	·98821	·01179	106,888	7,042,044	65·49
1-2	106,254	296	·99721	·00279	106,106	7,041,751	06·27
2-3	105,958	248	·99766	·00234	105,834	7,041,460	66·45
3-4	105,710	160	·99849	·00151	105,630	7,041,170	66·61
4-5	105,550	127	·99880	·00120	105,486	7,040,881	66·71
5-6	105,423	95	·99910	·00090	105,376	7,040,592	66·78
6	105,328	90	·99915	·00085	105,283	7,040,303	66·84
Weeks—							
1	105,238	383	·99636	·00364	105,046	7,040,015	66·89
2	104,855	278	·99735	·00265	104,716	7,037,995	67·12
3	104,577	230	·99780	·00220	104,462	7,035,981	67·28
Months—							
1	104,347	519	·99503	·00497	104,088	7,033,405	67·40
2	103,828	433	·99583	·00417	103,612	7,024,731	67·66
3	103,395	376	·99636	·00364	103,207	7,016,097	67·86
4	103,019	283	·99725	·00275	102,878	7,007,497	68·02
5	102,736	241	·99765	·00235	102,616	6,998,924	68·12
6	102,495	191	·99814	·00186	102,400	6,990,373	68·20
7	102,304	174	·99830	·00170	102,217	6,981,840	68·24
8	102,130	148	·99855	·00145	102,056	6,973,322	68·28
9	101,982	157	·99846	·00154	101,904	6,964,818	68·29
10	101,825	129	·99873	·00127	101,760	6,956,326	68·32
11	101,696	91	·99911	·00089	101,650	6,947,846	68·32
Years—							
1	101,605	722	·99289	·00711	101,244	6,939,376	68·30
2	100,883	381	·99622	·00378	100,692	6,838,132	67·78
3	100,502	295	·99706	·00294	100,354	6,737,440	67·04
4	100,207	207	·99793	·00207	100,104	6,637,086	66·23
5	100,000	-	-	-	-	6,536,982	65·37

TABLE 5. Life Tables for regional divisions of Canada, for ages zero to five, males and females, based on population 1931, deaths 1930-1932 and births 1926-1932, adding five p.c. births as published to allow for incompleteness of registration—Con.

Age x	British Columbia						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
MALES							
Days—							
0-1	107,557	1,160	·98922	·01078	106,977	6,684,487	62·15
1-2	106,397	368	·99654	·00346	106,213	6,684,194	62·82
2-3	106,029	323	·99695	·00305	135,868	0,683,903	03·04
3-4	105,706	216	·99796	·00204	105,598	6,683,613	63·23
4-5	105,490	120	·99886	·00114	105,430	6,683,324	63·36
5-6	105,370	89	·99916	·00084	105,326	6,683,036	63·42
6	105,281	83	·99921	·00079	105,240	6,682,746	63·48
Weeks—							
1	105,198	291	·99723	·00277	105,052	6,682,458	63·52
2	104,907	172	·99836	·00164	104,821	0,680,438	63·68
3	104,735	196	·99813	·00187	104,637	0,678,422	63·77
Months—							
1	104,539	387	·99630	·00370	104,346	6,675,842	63·86
2	104,152	330	·99683	·00317	103,987	6,667,147	64·01
3	103,822	399	·99616	·00384	103,628	6,658,482	04·13
4	103,423	305	·99705	·00295	103,276	6,649,847	04·30
6	103,118	228	·99779	·00221	103,004	6,641,241	64·40
6	102,890	241	·99766	·00234	102,770	6,632,658	64·46
7	102,649	133	·99870	·00130	102,582	6,624,094	64·53
8	102,516	114	·99889	·00111	102,459	6,615,546	04·63
9	102,402	203	·99802	·00198	102,300	6,607,008	64·52
10	102,199	108	·99894	·00106	102,145	6,598,483	64·56
11	102,091	127	·99876	·00124	102,028	0,589,971	64·55
Years—							
1	101,964	789	·99226	·00774	101,570	6,581,469	64·55
2	101,175	468	·99537	·00463	100,941	6,479,899	64·05
3	100,707	392	·99611	·00389	100,511	0,378,958	03·34
4	100,315	315	·99686	·00314	100,158	6,278,447	62·69
6	100,000	–	–	–	–	6,178,289	61·78
FEMALES							
Days—							
0-1	106,217	991	·99067	·00933	105,722	6,940,023	65·34
1-2	105,226	275	·99739	·00261	105,088	6,939,733	65·95
2-3	104,951	250	·99762	·00238	104,826	6,939,445	60·12
3-4	104,701	138	·99868	·00132	104,632	6,939,158	66·28
4-5	104,563	124	·99881	·00119	104,501	0,938,871	66·36
5-6	104,439	53	·99949	·00051	104,412	6,938,585	66·44
6	104,386	59	·99943	·00057	104,356	6,938,299	66·47
Weeks—							
1	104,327	184	·99824	·00176	104,235	6,938,013	06·50
2	104,143	85	·99918	·00082	104,100	0,936,009	66·60
3	104,058	125	·99880	·00120	103,996	6,934,007	66·64
Months—							
1	103,933	387	·99628	·00372	103,740	6,931,442	66·69
2	103,546	335	·99676	·00324	103,378	6,922,797	00·86
3	103,211	217	·99790	·00210	103,102	6,914,183	66·99
4	102,994	164	·99841	·00159	102,912	6,905,692	67·05
5	102,830	144	·99860	·00140	102,758	6,897,016	67·07
6	102,686	164	·99840	·00160	102,604	6,888,453	67·08
7	102,522	204	·99801	·00199	102,420	6,879,903	67·11
8	102,318	157	·99847	·00153	102,240	6,871,368	67·16
9	102,161	138	·99865	·00135	102,092	6,862,848	07·18
10	102,023	131	·99872	·00128	101,958	6,854,341	67·18
11	101,892	79	·99922	·00078	101,852	6,845,845	07·19
Years—							
1	101,813	749	·99264	·00736	101,438	6,837,358	67·16
2	101,064	349	·99655	·00345	100,890	6,735,920	66·66
3	100,715	416	·99587	·00413	100,507	6,635,030	66·88
4	100,299	299	·99702	·00298	100,150	6,634,523	65·15
5	100,000	–	–	–	–	6,434,373	64·34

TABLE 6. Comparison of Canadian Life Table[1] (ages 0-5) with most recent official tables of England and the United States

Age x	Probability of Dying Within One Year (q_x)						Probability of Living 10 Years ($10p_x$)					
	Males			Females			Males			Females		
	Canadian Life Table Ages 0-5	English Life Table No. 10	United States Life Table 1930	Canadian Life Table Ages 0-5	English Life Table No. 10	United States Life Table 1930	Canadian Life Table Ages 0-5	English Life Table No. 10	United States Life Table 1930	Canadian Life Table Ages 0-5	English Life Table No. 10	United States Life Table 1930
0	·09165	·07186	·06232	·07297	·05455	·04963	·87512	·89023	·90810	·89729	·91082	·92466
1	·01257	·01530	·00993	·01142	·01345	·00879	·96177	·95775	·96704	·96657	·96208	·97184
2	·00631	·00657	·00520	·00525	·00603	·00457	·97253	·97128	·97528	·97634	·97390	·97935
3	·00436	·00441	·00359	·00395	·00407	·00326	·97722	·97632	·97884	·98003	·97844	·98267
4	·00316	·00359	·00309	·00296	·00336	·00268	·97990	·97916	·98069	·98235	·98094	·98460
5	·00262	·00343	·00266	·00232	·00298	·00220	·98122	·98103	·98186	·98349	·98257	·98582
	Number Alive at Each Age Out of 100,000 Alive at Age 5 (l_x)						Complete Expectation of Life ($\mathring{e}_x$)					
0	113,035	111,026	109,006	110,449	108,667	107,278	59·62	58·74	59·12	61·79	62·88	62·67
1	102,687	103,048	102,213	102,389	102,739	101,954	64·61	62·25	62·04	65·64	65·48	64·93
2	101,396	101,471	101,198	101,220	101,357	101,058	64·42	62·21	61·65	65·39	65·37	64·50
3	100,756	100,805	100,671	100,689	100,746	100,597	63·83	61·62	60·97	64·73	64·70	63·79
4	100,317	100,361	100,311	100,291	100,337	100,268	63·11	60·89	60·19	63·99	64·03	63·00
5	100,000	100,000	100,000	100,000	100,000	100,000	62·30	60·11	59·38	63·17	63·24	62·17

[1] Table 2, Page 235.

TABLE 7. Recent rates of mortality in various countries (ages 0-5)

$1{,}000q_x$

Age x	Sweden 1921-30		Norway 1921-30		Denmark 1926-30		Finland 1921-30		Germany 1924-26		Netherlands 1921-30		France 1920-23	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
0	64·72	50·52	55·10	44·10	91·30	71·12	99·83	93·92	115·38	93·92	65·28	50·62	108·23	88·21
1	11·39	9·69	9·01	8·11	10·66	8·98	25·73	14·93	16·19	14·93	14·83	13·12	20·70	19·18
2	4·90	4·60	4·54	3·94	3·91	3·72	11·26	5·74	6·36	5·74	6·25	5·33	8·89	8·38
3	3·28	3·04	3·16	2·64	2·56	2·12	7·51	3·62	4·04	3·62	3·99	3·36	5·85	5·88
4	2·89	2·59	2·54	2·11	2·06	1·80	5·08	2·86	3·16	2·86	3·13	2·66	4·54	4·71
5	2·32	2·28	2·24	1·79	1·68	1·57	4·57	2·19	2·42	2·19	2·46	2·09	3·48	3·78

Age x	Switzerland 1921-30		Italy 1930-32		Japan 1921-25		India 1921-30		South Africa 1925-27		Australia 1932-34		Canada 1930-32	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
0	66·65	52·45	115·32	102·25	162·04	144·00	248·7	232·3	74·44	62·76	45·43	36·42	91·55	72·97
1	10·13	9·13	38·97	39·05	48·45	47·57	91·8	86·5	18·70	18·38	7·75	6·45	12·57	11·42
2	4·96	4·59	13·24	13·18	26·11	26·27	66·4	60·6	7·36	7·70	3·78	3·29	6·31	5·25
3	3·42	3·28	7·42	7·19	16·55	17·41	39·2	34·0	4·71	4·14	2·87	2·41	4·36	3·95
4	2·88	2·56	5·12	4·89	10·50	11·46	27·4	23·3	3·46	3·43	2·14	2·08	3·16	2·90
5	2·44	2·18	3·65	3·66	7·04	7·76	19·3	16·5	2·92	2·37	1·84	1·68	2·62	2·32

TABLE 8. Canadian Life Table (ages 0-5) (1) males, (2) females, 3 p.c. commutation columns

Age x	D_x	N_x	S_x	C_x	M_x	R_x
	MALES					
0	113,035·00	2,894,241·78	68,676,229·71	10,046·6010	28,736·6949	893,963·2358
1	99,696·11	2,781,206·78	65,781,987·93	1,216·8913	18,690·0949	865,226·5409
2	95,575·45	2,681,510·67	63,000,782·15	585·6906	17,473·2036	846,636·4460
3	92,206·01	2,585,935·22	60,319,271·48	390·0468	16,887·5130	829,063·2424
4	89,130·35	2,493,729·21	57,733,336·26	273·4470	16,497·4672	812,176·7294
6	86,260·88	2,404,598·86	55,239,607·05	219·4209	16,224·0202	795,678·2622
	FEMALES					
0	110,449·00	2,902,456·20	69,381,334·77	7,825·2427	25,911·4415	881,640·6692
1	99,406·79	2,792,007·20	66,478,878·57	1,101·8946	18,086·1988	855,729·2277
2	95,409·55	2,692,600·41	63,686,871·37	485·9402	16,984·3042	837,643·0289
3	92,144·69	2,597,190·86	60,994,270·96	353·6178	16,498·3640	820,658·7247
4	89,107·23	2,505,046·17	58,397,080·10	251·0192	16,144·7462	804,160·3607
5	86,260·88	2,415,938·94	55,892,033·93	194·2963	15,893·7270	788,015·6145

TABLE 9. Order of birth of legitimate children (including stillbirths) born in Canada, 1927-1936, by age group of mother

Age Group of Mother and Order of Birth of Child	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
All ages	**234,507**	**236,722**	**235,065**	**242,710**	**239,294**	**234,097**	**220,914**	**210,331**	**219,208**	**217,755**
1st child	49,612	52,107	54,372	57,736	55,486	62,067	48,396	49,165	62,951	55,386
2nd "	40,927	41,847	42,965	45,271	45,710	45,053	42,274	41,294	41,027	41,365
3rd "	32,694	32,649	32,380	33,157	33,233	33,037	32,006	31,429	30,544	29,139
4th "	26,136	25,302	24,695	24,889	24,905	24,659	23,600	23,339	23,111	22,120
5th "	20,898	20,417	19,122	19,097	18,873	18,597	17,690	17,451	17,185	16,766
6th "	15,951	16,093	16,351	16,367	14,630	14,354	13,799	13,661	13,180	12,766
7th "	12,316	12,407	12,031	12,161	11,930	11,606	10,703	10,636	10,254	10,112
8th "	9,721	9,678	9,200	9,442	9,467	9,370	8,593	8,436	8,122	7,816
9th "	7,460	7,379	6,945	7,243	7,099	7,312	6,710	6,816	6,132	6,065
10th "	6,760	6,682	5,496	5,536	5,525	5,623	5,323	5,327	4,941	4,813
11th "	4,188	4,132	3,966	4,001	3,939	3,984	3,846	3,794	3,803	3,628
12th "	2,994	3,191	2,841	2,944	3,022	2,971	2,759	2,763	2,724	2,710
13th "	2,058	2,075	2,050	2,085	1,978	2,054	1,936	1,928	1,868	1,836
14th "	1,358	1,291	1,291	1,381	1,356	1,385	1,193	1,279	1,224	1,222
15th "	895	864	870	810	834	868	803	843	789	771
16th "	534	505	515	518	483	480	481	481	455	465
17th "	329	312	282	303	267	304	274	248	296	276
18th "	175	201	168	162	172	143	160	165	144	129
19th "	87	96	104	84	82	92	65	78	77	82
20th and over	101	119	85	102	100	96	98	106	92	78
Not stated	314	375	436	421	313	242	205	302	289	231
Under 20 years	**11,474**	**12,128**	**12,523**	**13,053**	**12,911**	**12,477**	**11,589**	**11,216**	**11,393**	**11,172**
1st child	8,526	9,219	9,471	9,881	9,653	9,205	8,576	8,344	8,619	8,513
2nd "	2,460	2,381	2,557	2,609	2,727	2,742	2,508	2,353	2,314	2,193
3rd "	408	453	426	476	458	455	451	442	386	397
4th "	61	61	48	70	62	62	42	67	67	54
5th "	14	8	10	9	7	8	9	6	9	6
6th "	2	4	3	2	–	–	–	1	3	3
Not stated	3	2	8	6	4	5	3	4	6	6
20-24 years	**65,112**	**56,763**	**68,137**	**60,876**	**59,846**	**57,650**	**53,970**	**63,200**	**64,131**	**54,561**
1st child	22,400	23,798	24,986	26,672	25,224	23,504	21,676	21,968	23,885	24,852
2nd "	16,394	16,899	17,295	18,327	18,390	18,248	16,871	16,025	15,645	16,908
3rd "	9,256	9,297	9,353	9,431	9,750	9,589	9,327	9,122	8,608	8,109
4th "	4,472	4,257	4,201	4,221	4,257	4,213	4,088	4,021	3,967	3,725
5th "	1,755	1,703	1,482	1,510	1,556	1,460	1,379	1,447	1,411	1,362
6th "	567	554	528	463	457	432	442	436	410	401
7th "	165	153	176	150	123	119	112	121	114	122
8th "	46	56	52	38	40	35	31	21	40	31
9th "	27	19	13	22	15	10	14	6	12	10
10th "	10	7	10	4	10	4	4	3	5	4
11th "	–	11	19	2	2	4	2	2	5	6
Not stated	20	9	22	36	22	32	24	28	29	31
25-29 years	**63,617**	**63,883**	**64,397**	**66,087**	**66,212**	**65,297**	**62,265**	**61,901**	**62,397**	**61,977**
1st child	11,966	12,414	13,185	14,135	13,826	13,007	12,167	12,635	13,796	14,904
2nd "	12,680	13,144	13,853	14,635	14,977	14,735	14,051	13,889	13,907	13,990
3rd "	11,823	11,691	11,743	12,048	12,363	12,527	12,180	11,786	11,665	10,738
4th "	10,036	9,706	9,414	9,469	9,703	9,675	9,300	9,221	9,182	8,647
5th "	7,637	7,407	6,992	6,876	6,797	6,834	6,662	6,615	6,413	6,294
6th "	4,797	4,880	4,657	4,486	4,258	4,266	4,134	3,987	3,960	3,872
7th "	2,552	2,687	2,653	2,538	2,407	2,392	2,127	2,147	1,988	2,033
8th "	1,156	1,182	1,168	1,130	1,152	1,168	988	1,002	945	907
9th "	534	509	465	447	424	425	407	407	375	337
10th "	196	212	204	177	181	154	146	150	144	143
11th "	72	67	78	69	66	56	48	65	45	45
12th "	39	49	30	21	23	27	21	18	20	21
13th "	12	11	19	10	13	6	5	10	11	6
14th "	–	5	7	1	1	4	2	6	5	3
15th "	–	4	3	2	2	1	2	–	3	1
16th "	–	–	5	2	–	–	–	1	1	–
Not stated	17	15	21	41	29	20	25	33	37	36
30-34 years	**51,121**	**61,021**	**49,440**	**60,941**	**60,242**	**48,996**	**46,583**	**47,041**	**45,965**	**45,869**
1st child	4,631	4,663	4,614	4,949	4,802	4,492	4,229	4,439	4,823	6,291
2nd "	6,297	6,402	6,376	6,671	6,617	6,576	6,174	6,426	6,497	6,525
3rd "	7,190	7,039	6,882	7,093	6,808	6,872	6,533	6,669	6,528	6,438
4th "	6,854	6,716	6,562	6,685	6,616	6,390	6,246	6,161	6,066	5,974
5th "	6,578	6,503	6,043	6,124	6,064	5,814	5,643	6,555	5,601	5,349
6th "	6,679	6,833	6,462	6,692	6,363	5,225	5,046	5,027	4,800	4,720
7th "	4,836	4,871	4,693	4,749	4,801	4,648	4,292	4,210	4,068	4,012
8th "	3,727	3,705	3,518	3,677	3,712	3,611	3,316	3,347	3,108	3,009
9th "	2,446	2,407	2,379	2,356	2,439	2,539	2,345	2,316	2,024	2,030
10th "	1,486	1,452	1,456	1,457	1,469	1,464	1,431	1,458	1,259	1,236
11th "	788	768	744	787	325	763	721	765	670	661
12th "	380	413	373	370	408	377	301	367	339	350
13th "	181	175	175	166	181	179	179	167	144	160
14th "	80	90	77	76	57	63	60	69	67	62
16th "	33	43	40	31	30	28	23	33	24	25

TABLE 9. Order of birth of legitimate children (including stillbirths) born in Canada, 1927-1936, by age group of mother—Con.

Age Group of Mother and Order of Birth of Child	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
30-34 years—Con.										
16th child	9	9	19	18	10	12	9	14	13	3
17th "	6	7	7	6	5	13	10	3	7	7
18th "	-	4	4	7	3	5	4	1	4	1
19th "	-	2	2	2	1	2	5	-	-	3
20th and over	-	6	1	-	2	-	-	2	-	1
Not stated	20	13	13	26	29	23	17	12	23	22
35-39 years	**36,570**	**36,157**	**34,579**	**35,543**	**34,705**	**34,122**	**32,244**	**31,455**	**31,339**	**30,562**
1st child	1,652	1,571	1,650	1,621	1,580	1,479	1,418	1,425	1,501	1,503
2nd "	2,432	2,415	2,293	2,440	2,441	2,270	2,182	2,100	2,193	2,282
3rd "	3,175	3,362	3,141	3,310	3,131	2,869	2,819	2,709	2,813	2,802
4th "	3,707	3,526	3,445	3,497	3,353	3,340	3,101	2,959	2,994	2,898
5th "	3,723	3,707	3,503	3,416	3,372	3,373	3,096	2,903	2,963	2,846
6th "	3,665	3,566	3,456	3,545	3,374	3,276	3,167	3,083	3,028	2,832
7th "	3,528	3,570	3,353	3,455	3,451	3,316	3,029	2,969	3,008	2,905
8th "	3,439	3,395	3,204	3,311	3,272	3,333	3,066	2,926	2,875	2,782
9th "	3,176	3,050	2,828	3,032	2,972	3,047	2,749	2,912	2,650	2,547
10th "	2,629	2,575	2,454	2,528	2,531	2,558	2,495	2,431	2,295	2,274
11th "	1,973	1,956	1,892	1,889	1,814	1,814	1,877	1,830	1,929	1,748
12th "	1,390	1,486	1,332	1,427	1,389	1,378	1,367	1,306	1,289	1,295
13th "	922	867	919	914	895	903	843	845	817	817
14th "	515	496	489	554	551	557	472	477	455	487
15th "	298	276	291	283	270	308	278	297	267	283
16th "	167	150	162	147	150	129	150	125	131	132
17th "	90	86	77	68	70	78	57	66	59	66
18th "	39	50	33	39	48	34	35	40	29	18
19th "	20	19	25	16	12	19	12	15	19	17
20th and over	20	21	19	26	16	21	18	20	5	12
Not stated	10	13	13	25	13	20	13	17	19	16
40-44 years	**14,435**	**14,485**	**13,929**	**14,257**	**13,602**	**13,777**	**12,595**	**12,779**	**12,299**	**12,142**
1st child	391	380	353	396	342	345	296	302	286	285
2nd "	569	515	530	513	512	432	441	466	428	435
3rd "	726	700	754	718	648	673	636	660	604	609
4th "	902	924	840	869	837	817	748	835	782	766
5th "	1,067	990	997	1,076	985	1,015	834	859	804	850
6th "	1,119	1,137	1,109	1,063	999	1,047	925	919	891	858
7th "	1,103	1,096	1,143	1,172	1,049	1,136	1,046	999	978	953
8th "	1,210	1,209	1,135	1,183	1,171	1,104	1,082	1,040	1,039	987
9th "	1,141	1,261	1,132	1,262	1,143	1,188	1,073	1,072	959	1,038
10th "	1,296	1,282	1,250	1,243	1,192	1,203	1,126	1,160	1,110	1,027
11th "	1,194	1,178	1,105	1,119	1,113	1,182	1,058	1,025	1,024	1,064
12th "	1,033	1,122	971	1,001	1,067	1,045	941	931	934	929
13th "	825	902	839	859	790	849	789	791	794	772
14th "	661	612	638	651	643	648	566	626	594	562
15th "	484	458	462	428	459	447	417	455	429	391
16th "	289	284	286	294	265	273	268	284	253	265
17th "	195	176	175	196	166	174	174	131	191	166
18th "	114	118	103	89	94	86	84	99	87	82
19th "	50	70	59	56	50	51	36	54	42	47
20th and over	59	67	46	61	67	58	54	64	64	50
Not stated	7	4	2	8	10	4	1	7	6	6
45 years and over	**1,597**	**1,553**	**1,439**	**1,500**	**1,469**	**1,549**	**1,471**	**1,385**	**1,436**	**1,283**
1st child	40	22	29	37	27	13	18	25	20	16
2nd "	33	29	22	37	29	26	29	15	29	18
3rd "	50	55	49	50	64	42	45	32	36	35
4th "	60	75	53	60	62	54	67	63	54	51
5th "	88	66	73	76	79	85	61	59	73	55
6th "	90	96	115	106	75	101	83	94	81	61
7th "	103	112	107	93	95	94	95	88	96	82
8th "	120	111	111	96	109	114	109	96	112	97
9th "	127	121	123	120	105	100	122	101	110	103
10th "	133	144	120	123	141	137	120	125	125	128
11th "	145	151	124	134	128	165	136	115	130	103
12th "	148	119	133	124	134	143	128	141	141	115
13th "	115	120	97	136	99	117	119	114	101	91
14th "	99	87	79	100	104	113	92	100	103	107
15th "	79	82	74	66	73	84	83	58	66	71
16th "	68	62	42	57	58	66	54	57	57	55
17th "	37	43	23	33	26	39	33	47	39	36
18th "	21	28	28	27	27	18	37	25	24	28
19th "	17	5	18	10	19	20	12	9	16	15
20th and over	22	25	19	15	15	17	26	20	23	15
Not stated	2	-	-	-	-	1	2	1	-	1
Age not stated	**681**	**732**	**621**	**453**	**307**	**229**	**197**	**294**	**248**	**189**
1st child	106	140	84	45	32	22	16	27	21	22
2nd "	62	62	39	39	17	24	18	20	14	14
3rd "	66	52	32	31	11	10	15	10	4	11

TABLE 9. Order of birth of legitimate children (including stillbirths) born in Canada, 1927-1936, by age group of mother—Con.

Age Group of Mother and Order of Birth of Child	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Age not stated—Con.										
4th child	43	37	32	18	15	8	8	12	9	5
5th "	36	33	22	10	13	8	6	8	11	4
6th "	32	23	21	10	4	7	2	4	7	9
7th "	29	18	6	4	4	1	2	2	2	5
8th "	23	20	12	7	1	5	2	4	3	3
9th "	9	12	5	4	1	3	-	2	2	-
10th "	10	10	2	4	1	3	1	-	3	1
11th "	16	1	4	1	1	-	4	2	-	1
12th "	4	2	2	1	1	1	1	-	1	-
13th "	3	-	1	-	-	-	1	1	1	-
14th "	3	1	1	-	-	-	1	1	-	1
15th "	1	1	-	-	-	-	-	-	-	-
16th "	1	-	1	-	-	-	-	-	-	-
17th "	1	-	-	-	-	-	-	1	-	-
18th "	1	1	-	-	-	-	-	-	-	-
19th "	-	-	-	-	-	-	-	-	-	-
20th and over	-	-	-	-	-	-	-	-	-	-
Not stated	235	319	357	279	206	137	120	200	170	113

TABLE 10. Married mothers by racial origin and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930

Racial Origin and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
All races	**242,289**	**949,926**	**839,836**	**24,299**	**974,225**	**3·92**	**3·47**	**0·10**	**4·02**
Under 20	13,047	16,323	15,686	541	16,864	1·25	1·20	0·04	1·29
20-24	60,840	117,197	109,149	3,248	120,445	1·93	1·79	0·05	1·98
25-29	66,046	207,460	187,878	5,077	212,537	3·14	2·84	0·08	3·22
30-34	50,915	240,734	212,499	6,105	246,839	4·73	4·17	0·12	4·85
35-39	35,518	232,976	200,853	5,896	238,872	6·56	5·65	0·17	6·73
40-44	14,249	120,251	101,303	3,010	123,261	8·44	7·11	0·21	8·65
45 and over	1,500	14,434	11,976	392	14,826	9·62	7·98	0·26	9·88
Age not stated	174	551	492	30	581	3·17	2·83	0·17	3·34
British	**100,920**	**311,246**	**288,451**	**10,932**	**322,177**	**3·08**	**2·86**	**0·11**	**3·19**
Under 20	6,073	7,385	7,169	263	7,648	1·22	1·18	0·04	1·26
20-24	25,557	44,733	42,504	1,485	46,218	1·75	1·66	0·06	1·81
25-29	27,136	70,436	66,118	2,310	72,746	2·60	2·44	0·09	2·68
30-34	21,754	79,256	73,306	2,830	82,086	3·64	3·37	0·13	3·77
35-39	14,383	70,736	64,556	2,617	73,353	4·92	4·49	0·18	5·10
40-44	5,493	35,051	31,566	1,291	36,342	6·38	5·75	0·24	6·62
45 and over	481	3,518	3,118	122	3,640	7·31	6·48	0·25	7·57
Age not stated	43	130	114	14	144	3·02	2·65	0·33	3·35
English	**65,644**	**169,136**	**156,989**	**6,904**	**175,040**	**3·05**	**2·83**	**0·11**	**3·15**
Under 20	3,745	4,586	4,442	179	4,765	1·22	1·19	0·05	1·27
20-24	14,884	26,318	25,014	889	27,207	1·77	1·68	0·06	1·83
25-29	14,965	39,687	37,260	1,274	40,961	2·65	2·49	0·09	2·74
30-34	11,457	42,528	39,393	1,503	44,031	3·71	3·44	0·13	3·84
35-39	7,396	36,343	33,216	1,356	37,699	4·91	4·49	0·18	5·10
40-44	2,802	17,659	15,882	626	18,285	6·30	5·67	0·22	6·53
45 and over	269	1,932	1,708	69	2,001	7·18	6·35	0·26	7·44
Age not stated	26	83	74	8	91	3·19	2·85	0·31	3·50
Irish	**21,117**	**69,060**	**63,585**	**2,453**	**71,513**	**3·27**	**3·01**	**0·12**	**3·39**
Under 20	1,124	1,342	1,316	32	1,374	1·19	1·17	0·03	1·22
20-24	4,917	8,624	8,147	279	8,903	1·75	1·66	0·06	1·81
25-29	5,521	14,493	13,548	479	14,972	2·63	2·45	0·09	2·71
30-34	4,847	18,109	16,626	676	18,785	3·74	3·43	0·14	3·88
35-39	3,304	16,991	15,417	612	17,603	5·14	4·67	0·19	5·33
40-44	1,301	8,730	7,840	342	9,072	6·71	6·03	0·26	6·97
45 and over	93	738	663	29	767	7·94	7·13	0·31	8·25
Age not stated	10	33	28	4	37	3·30	2·80	0·40	3·70

TABLE 10. Married mothers by racial origin and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Racial Origin and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
Scottish	**23,427**	**70,565**	**65,587**	**2,493**	**73,058**	**3·01**	**2·80**	**0·11**	**3·12**
Under 20	1,161	1,405	1,362	51	1,456	1·21	1·17	0·04	1·25
20-24	5,557	9,436	9,009	306	9,742	1·70	1·62	0·06	1·75
25-29	6,425	15,739	14,820	543	16,282	2·45	2·31	0·08	2·53
30-34	5,255	17,923	16,656	627	18,550	3·41	3·17	0·12	3·53
35-39	3,560	16,826	15,405	627	17,453	4·73	4·33	0·18	4·90
40-44	1,348	8,400	7,601	314	8,714	6·23	5·64	0·23	6·46
45 and over	115	823	723	24	847	7·16	6·29	0·21	7·37
Age not stated	6	13	11	1	14	2·17	1·83	0·17	2·33
French	**93,974**	**466,777**	**397,512**	**8,845**	**475,622**	**4·97**	**4·23**	**0·09**	**5·06**
Under 20	3,916	5,200	4,898	160	5,360	1·33	1·25	0·04	1·37
20-24	21,867	47,373	43,188	1,054	48,427	2·17	1·98	0·05	2·21
25-29	25,705	96,667	85,053	1,751	98,418	3·76	3·31	0·07	3·83
30-34	20,307	120,684	103,037	2,224	122,908	5·94	5·07	0·11	6·05
35-39	15,028	122,918	101,765	2,289	125,207	8·18	6·77	0·15	8·33
40-44	6,416	65,886	53,137	1,189	67,075	10·27	8·28	0·19	10·45
45 and over	713	7,964	6,353	176	8,140	11·17	8·91	0·25	11·42
Age not stated	22	85	81	2	87	3·86	3·68	0·09	3·95
Belgian	**646**	**2,041**	**1,861**	**54**	**2,095**	**3·10**	**2·88**	**0·08**	**3·24**
Under 20	33	36	35	1	37	1·09	1·06	0·03	1·12
20-24	150	258	245	6	264	1·72	1·63	0·04	1·76
25-29	213	569	529	11	580	2·67	2·48	0·05	2·72
30-34	129	479	425	15	494	3·71	3·29	0·12	3·83
35-39	85	457	404	10	467	5·38	4·75	0·12	5·49
40-44	33	211	195	7	218	6·39	5·91	0·21	6·61
45 and over	2	30	27	2	32	15·00	13·50	1·00	16·00
Age not stated	1	1	1	2	3	1·00	1·00	2·00	3·00
Central and Eastern Europcan	**29,500**	**109,331**	**98,091**	**2,867**	**112,198**	**3·71**	**3·33**	**0·10**	**3·80**
Under 20	1,920	2,333	2,252	72	2,405	1·22	1·17	0·04	1·25
20-24	8,656	16,098	15,049	474	16,572	1·86	1·74	0·05	1·91
25-29	8,350	26,198	23,793	632	26,830	3·14	2·85	0·08	3·21
30-34	5,250	25,120	22,212	674	25,794	4·78	4·23	0·13	4·91
35-39	3,672	25,130	22,253	606	25,736	6·84	6·06	0·17	7·01
40-44	1,435	12,507	10,844	348	12,855	8·72	7·56	0·24	8·96
45 and over	182	1,844	1,593	55	1,899	10·13	8·75	0·30	10·43
Age not stated	35	101	95	6	107	2·89	2·71	0·17	3·06
Austrian	**1,280**	**5,504**	**4,899**	**168**	**5,672**	**4·30**	**3·83**	**0·13**	**4·43**
Under 20	65	85	81	2	87	1·31	1·25	0·03	1·34
20-24	360	723	662	30	753	2·01	1·84	0·08	2·09
25-29	360	1,341	1,181	30	1,371	3·73	3·28	0·08	3·81
30-34	221	1,216	1,072	41	1,257	5·50	4·85	0·19	5·69
35-39	193	1,446	1,293	34	1,480	7·49	6·70	0·18	7·67
40-44	72	634	555	29	663	8·81	7·71	0·40	9·21
45 and over	7	55	51	2	57	7·86	7·29	0·29	8·14
Age not stated	2	4	4	–	4	2·00	2·00	–	2·00
Bulgarian	**27**	**42**	**37**	**3**	**45**	**1·56**	**1·37**	**0·11**	**1·67**
Under 20	1	1	1	–	1	1·00	1·00	–	1·00
20-24	14	22	20	2	24	1·57	1·43	0·14	1·71
25-29	7	8	7	–	–	1·14	1·00	–	1·14
30-34	5	11	9	1	12	2·20	1·80	0·20	2·40
35-39	–	–	–	–	–	–	–	–	–
40-44	–	–	–	–	–	–	–	–	–
45 and over	–	–	–	–	–	–	–	–	–
Age not stated	–	–	–	–	–	–	–	–	–
Czech and Slovak	**778**	**2,181**	**1,977**	**54**	**2,235**	**2·80**	**2·54**	**0·07**	**2·87**
Under 20	36	40	39	1	41	1·11	1·08	0·03	1·14
20-24	222	367	342	13	380	1·65	1·54	0·06	1·71
25-29	281	732	651	16	748	2·60	2·32	0·06	2·66
30-34	149	530	474	12	542	3·56	3·18	0·08	3·64
35-39	69	358	329	8	366	5·19	4·77	0·12	5·30
40-44	19	138	127	4	142	7·26	6·68	0·21	7·47
45 and over	2	16	15	–	16	8·00	7·50	–	8·00
Age not stated	–	–	–	–	–	–	–	–	–

TABLE 10. Married mothers by racial origin and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Racial Origin and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
Finnish	**874**	**1,942**	**1,779**	**86**	**2,027**	**2·22**	**2·04**	**0·10**	**2·32**
Under 20	68	78	76	2	80	1·15	1·12	0·03	1·18
20-24	291	429	410	13	442	1·47	1·41	0·04	1·62
25-29	269	623	485	19	542	1·94	1·80	0·07	2·01
30-34	142	339	298	20	359	2·39	2·10	0·14	2·53
35-39	67	360	313	20	380	5·37	4·67	0·30	5·67
40-44	32	187	173	11	198	5·84	5·41	0·34	6·19
45 and over	3	15	13	–	15	6·00	4·33	–	5·00
Age not stated	2	11	11	–	11	5·50	5·50	–	5·50
German	**11,969**	**45,263**	**41,207**	**1,147**	**46,410**	**3·78**	**3·44**	**0·10**	**3·88**
Under 20	670	808	788	30	838	1·21	1·18	0·04	1·25
20-24	3,309	6,151	5,826	176	6,326	1·86	1·76	0·05	1·91
25-29	3,289	10,182	9,420	244	10,426	3·10	2·86	0·07	3·17
30-34	2,315	10,757	9,722	290	11,047	4·65	4·20	0·13	4·77
35-39	1,568	10,242	9,216	227	10,469	6·53	6·88	0·14	6·68
40-44	729	6,251	5,453	156	6,407	8·57	7·48	0·21	8·79
45 and over	82	850	762	23	873	10·37	9·29	0·28	10·65
Age not stated	7	22	20	2	24	3·14	2·86	0·29	3·43
Greek	**189**	**569**	**507**	**28**	**597**	**3·01**	**2·68**	**0·15**	**3·16**
Under 20	5	6	6	–	5	1·00	1·00	–	1·00
20-24	40	66	61	5	71	1·65	1·53	0·13	1·78
25-29	77	189	176	6	195	2·45	2·29	0·08	2·53
30-34	27	92	81	7	99	3·41	3·00	0·26	3·67
35-39	27	131	110	10	141	4·85	4·07	0·37	5·22
40-44	10	72	62	–	72	7·20	6·20	–	7·20
45 and over	3	14	12	–	14	4·67	4·00	–	4·67
Age not stated	–	–	–	–	–	–	–	–	–
Hungarian	**1,323**	**4,437**	**3,824**	**115**	**4,552**	**3·35**	**2·89**	**0·09**	**3·44**
Under 20	73	87	85	5	92	1·19	1·16	0·07	1·26
20-24	373	655	611	18	673	1·76	1·64	0·05	1·80
25-29	428	1,305	1,136	34	1,339	3·05	2·65	0·08	3·13
30-34	275	1,207	990	35	1,242	4·39	3·60	0·13	4·52
35-39	132	819	684	17	836	6·20	5·18	0·13	6·33
40-44	38	340	296	6	346	8·95	7·79	0·16	9·11
45 and over	3	23	21	–	23	7·67	7·00	–	7·67
Age not stated	1	1	1	–	1	1·00	1·00	–	1·00
Polish	**3,517**	**12,041**	**10,787**	**313**	**12,354**	**3·42**	**3·07**	**0·09**	**3·51**
Under 20	228	265	257	12	277	1·16	1·13	0·05	1·21
20-24	1,090	1,914	1,772	56	1,970	1·76	1·63	0·05	1·81
25-29	1,077	3,152	2,879	76	3,228	2·93	2·67	0·07	3·00
30-34	534	2,414	2,110	61	2,475	4·52	3·95	0·11	4·63
35-39	429	2,926	2,566	60	2,986	6·82	5·98	0·14	6·96
40-44	134	1,161	1,020	35	1,196	8·66	7·61	0·26	8·93
45 and over	17	175	151	13	188	10·29	8·88	0·76	11·06
Age not stated	8	34	32	–	34	4·25	4·00	–	4·25
Roumanian	**601**	**2,626**	**2,254**	**85**	**2,711**	**4·37**	**3·75**	**0·14**	**4·51**
Under 20	54	64	62	2	66	1·19	1·15	0·04	1·22
20-24	163	380	349	19	399	2·33	2·14	0·12	2·45
25-29	168	614	534	14	628	3·65	3·18	0·08	3·74
30-34	114	665	560	33	698	5·83	4·91	0·29	6·12
35-39	71	603	516	7	610	8·49	7·27	0·10	8·59
40-44	30	294	228	10	304	9·80	7·60	0·33	10·13
45 and over	1	6	5	–	6	6·00	5·00	–	6·00
Age not stated	–	–	–	–	–	–	–	–	–
Russian	**2,005**	**8,086**	**7,263**	**204**	**8,290**	**4·03**	**3·62**	**0·10**	**4·13**
Under 20	115	149	143	2	151	1·30	1·24	0·02	1·31
20-24	536	1,049	999	20	1,069	1·96	1·86	0·04	1·99
25-29	528	1,654	1,514	53	1,707	3·13	2·87	0·10	3·23
30-34	392	1,968	1,772	43	2,011	5·02	4·52	0·11	5·13
35-39	305	2,111	1,851	54	2,165	6·92	6·07	0·18	7·10
40-44	104	904	781	22	926	8·69	7·51	0·21	8·90
45 and over	22	240	194	8	248	10·91	8·82	0·36	11·27
Age not stated	3	11	9	2	13	3·67	3·00	0·67	4·33

TABLE 10. Married mothers by racial origin and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Racial Origin and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
Serb and Croat	**531**	**1,553**	**1,382**	**53**	**1,606**	**2·92**	**2·60**	**0·10**	**3·02**
Under 20	30	36	35	-	36	1·20	1·17	-	1·20
20-24	147	237	221	10	247	1·61	1·50	0·07	1·68
25-29	187	510	455	16	526	2·73	2·43	0·09	2·81
30-34	99	385	332	12	397	3·89	3·35	0·12	4·01
35-39	54	296	261	6	302	5·48	4·83	0·11	5·59
40-44	12	87	76	8	95	7·25	6·33	0·67	7·92
45 and over	-	-	-	-	-	-	-	-	-
Age not stated	2	2	2	1	3	1·00	1·00	0·50	1·50
Ukrainian	**6,406**	**25,087**	**22,175**	**612**	**25,699**	**3·92**	**3·46**	**0·10**	**4·01**
Under 20	575	715	680	16	731	1·24	1·18	0·03	1·27
20-24	2,111	4,105	3,776	113	4,218	1·94	1·79	0·05	2·00
25-29	1,679	5,988	5,355	124	6,112	3·57	3·19	0·07	3·64
30-34	977	5,536	4,792	119	5,655	5·67	4·90	0·12	5·79
35-39	757	5,838	5,114	163	6,001	7·71	6·76	0·22	7·93
40-44	255	2,439	2,073	67	2,506	9·56	8·13	0·26	9·83
45 and over	42	450	369	9	459	10·71	8·79	0·21	10·93
Age not stated	10	16	16	1	17	1·60	1·60	0·10	1·70
Chinese	**242**	**1,110**	**1,057**	**12**	**1,122**	**4·59**	**4·37**	**0·05**	**4·64**
Under 20	17	21	21	-	21	1·24	1·24	-	1·24
20-24	56	127	121	1	128	2·27	2·16	0·02	2·29
25-29	42	175	169	2	177	4·17	4·02	0·05	4·21
30-34	59	329	313	4	333	5·58	5·31	0·07	5·64
35-39	46	307	293	2	309	6·67	6·37	0·04	6·72
40-44	15	92	86	3	95	6·13	5·73	0·20	6·33
45 and over	7	59	54	-	59	8·43	7·71	-	8·43
Age not stated	-	-	-	-	-	-	-	-	-
Dutch	**2,299**	**8,782**	**7,987**	**206**	**8,988**	**3·82**	**3·47**	**0·09**	**3·91**
Under 20	125	152	150	3	155	1·22	1·20	0·02	1·24
20-24	592	1,167	1,113	21	1,188	1·97	1·88	0·04	2·01
25-29	640	1,983	1,849	46	2,029	3·10	2·89	0·07	3·17
30-34	476	2,267	2,038	49	2,316	4·76	4·28	0·10	4·87
35-39	330	2,097	1,855	54	2,151	6·35	5·62	0·16	6·52
40-44	119	957	846	33	990	8·04	7·11	0·28	8·32
45 and over	14	148	126	-	148	10·57	9·00	-	10·57
Age not stated	3	11	10	-	11	3·67	3·33	-	3·67
Hebrew	**2,220**	**5,185**	**4,944**	**168**	**5,353**	**2·34**	**2·23**	**0·08**	**2·41**
Under 20	42	40	40	2	42	0·95	0·95	0·05	1·00
20-24	659	830	812	31	861	1·26	1·23	0·05	1·31
25-29	732	1,403	1,361	55	1,458	1·92	1·86	0·08	1·99
30-34	475	1,430	1,373	32	1,462	3·01	2·89	0·07	3·08
35-39	257	1,163	1,076	37	1,200	4·53	4·19	0·14	4·67
40-44	49	297	261	8	305	6·06	5·33	0·16	6·22
45 and over	3	21	20	1	22	7·00	6·67	0·33	7·33
Age not stated	3	1	1	2	3	0·33	0·33	0·67	1·00
Indian	**2,872**	**12,717**	**9,948**	**239**	**12,956**	**4·43**	**3·46**	**0·08**	**4·51**
Under 20	322	421	401	23	444	1·31	1·25	0·07	1·38
20-24	773	1,928	1,676	41	1,969	2·49	2·17	0·05	2·55
25-29	661	2,834	2,306	42	2,876	4·29	3·49	0·06	4·35
30-34	523	3,129	2,424	54	3,183	5·98	4·63	0·10	6·09
35-39	359	2,576	1,834	44	2,620	7·18	5·11	0·12	7·30
40-44	152	1,350	955	27	1,377	8·88	6·28	0·18	9·06
45 and over	38	325	223	7	332	8·55	5·87	0·18	8·74
Age not stated	44	154	129	1	155	3·50	2·93	0·02	3·52
Italian	**2,439**	**9,049**	**8,020**	**286**	**9,335**	**3·71**	**3·29**	**0·12**	**3·83**
Under 20	198	246	244	6	252	1·24	1·23	0·03	1·27
20-24	646	1,301	1,218	42	1,343	2·01	1·89	0·07	2·08
25-29	587	1,861	1,677	61	1,922	3·17	2·86	0·10	3·27
30-34	510	2,297	2,043	53	2,350	4·50	4·01	0·10	4·61
35-39	351	2,142	1,849	83	2,225	6·10	5·27	0·24	6·34
40-44	124	1,028	843	29	1,057	8·29	6·80	0·23	8·52
45 and over	15	150	125	11	161	10·00	8·33	0·73	10·73
Age not stated	8	24	21	1	25	3·00	2·63	0·13	3·13

TABLE 10. Married mothers by racial origin and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Racial Origin and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
Japanese	864	3,084	2,893	60	3,144	3·57	3·35	0·07	3·64
Under 20	24	31	30	-	31	1·29	1·25	-	1·29
20-24	200	384	357	6	390	1·92	1·84	0·03	1·95
25-29	253	743	714	18	761	2·94	2·82	0·07	3·01
30-34	200	859	800	18	877	4·30	4·00	0·09	4·39
35-39	140	796	733	15	811	5·59	5·24	0·11	5·79
40-44	40	228	208	3	231	5·70	5·20	0·08	5·78
45 and over	6	41	39	-	41	6·83	5·50	-	6·83
Age not stated	1	2	2	-	2	2·00	2·00	-	2·00
Negro	360	1,546	1,348	72	1,618	4·29	3·74	0·20	4·49
Under 20	29	40	38	2	42	1·38	1·31	0·07	1·45
20-24	88	200	183	13	213	2·27	2·08	0·15	2·42
25-29	100	393	354	15	408	3·93	3·54	0·15	4·08
30-34	76	414	368	20	434	5·45	4·84	0·26	5·71
35-39	44	296	247	11	307	6·73	5·61	0·25	6·98
40-44	20	157	137	8	175	8·35	6·85	0·40	8·75
45 and over	3	36	21	3	39	12·00	7·00	1·00	13·00
Age not stated	-	-	-	-	-	-	-	-	-
Scandinavian	4,531	14,544	13,605	407	14,951	3·21	3·00	0·09	3·30
Under 20	251	299	292	5	304	1·19	1·16	0·02	1·21
20-24	1,203	2,067	1,976	53	2,120	1·72	1·64	0·04	1·76
25-29	1,253	3,233	3,053	99	3,332	2·58	2·44	0·08	2·66
30-34	866	3,348	3,135	100	3,448	3·87	3·62	0·12	3·98
35-39	643	3,358	3,102	86	3,444	5·22	4·82	0·13	5·36
40-44	282	1,959	1,795	51	2,020	6·98	6·37	0·18	7·16
45 and over	33	270	251	13	283	8·18	7·61	0·39	8·58
Age not stated	-	-	-	-	-	-	-	-	-
Danish	689	1,906	1,775	68	1,974	2·77	2·58	0·10	2·87
Under 20	42	50	49	1	51	1·19	1·17	0·02	1·21
20-24	192	292	285	8	300	1·52	1·48	0·04	1·56
25-29	210	495	461	24	519	2·36	2·20	0·11	2·47
30-34	144	485	455	22	507	3·37	3·16	0·15	3·52
35-39	72	368	340	7	375	5·11	4·72	0·10	5·21
40-44	29	215	185	6	222	7·45	6·38	0·21	7·66
45 and over	-	-	-	-	-	-	-	-	-
Age not stated	-	-	-	-	-	-	-	-	-
Icelandic	388	1,356	1,272	43	1,399	3·49	3·28	0·11	3·61
Under 20	11	13	13	-	13	1·18	1·18	-	1·18
20-24	79	128	120	7	135	1·62	1·52	0·09	1·71
25-29	116	298	286	8	306	2·57	2·47	0·07	2·64
30-34	85	345	327	8	354	4·07	3·85	0·09	4·16
35-39	61	337	313	8	345	5·52	5·13	0·13	5·66
40-44	33	225	204	8	233	6·82	6·18	0·24	7·06
45 and over	3	9	9	4	13	3·00	3·00	1·33	4·33
Age not stated	-	-	-	-	-	-	-	-	-
Norwegian	1,977	6,552	6,140	179	6,731	3·31	3·11	0·09	3·40
Under 20	113	134	129	4	138	1·19	1·14	0·04	1·22
20-24	518	873	844	16	889	1·59	1·63	0·03	1·72
25-29	518	1,395	1,317	44	1,439	2·69	2·54	0·08	2·78
30-34	374	1,491	1,387	44	1,535	3·99	3·71	0·12	4·10
35-39	298	1,544	1,425	39	1,583	5·18	4·79	0·13	5·31
40-44	138	958	900	26	994	7·01	6·52	0·19	7·20
45 and over	18	147	137	6	153	8·17	7·61	0·33	8·50
Age not stated	-	-	-	-	-	-	-	-	-
Swedish	1,477	4,730	4,418	117	4,847	3·20	2·99	0·08	3·28
Under 20	85	102	101	-	102	1·20	1·19	-	1·20
20-24	414	774	727	22	796	1·87	1·76	0·05	1·92
25-29	409	1,045	989	23	1,068	2·56	2·42	0·06	2·61
30-34	263	1,026	955	26	1,052	3·90	3·67	0·10	4·00
35-39	212	1,109	1,023	32	1,141	5·23	4·83	0·15	5·38
40-44	82	560	507	11	571	6·83	6·18	0·13	6·96
45 and over	12	114	105	3	117	9·50	8·75	0·25	9·75
Age not stated	-	-	-	-	-	-	-	-	-

TABLE 11. Specific fertility rates of married women 15-49 years of age, by racial origin, Canada, 1930-1932

Item	Total	Age Group									
		Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50 and over	Not Stated
British—											
Births, 1930	97,512	7	5,898	24,895	26,339	20,971	13,744	5,176	428	13	41
Births, 1931	93,562	7	5,809	24,222	25,292	19,917	13,114	4,743	429	5	24
Births, 1932	90,397	2	5,717	23,475	24,706	18,792	12,612	4,635	429	2	27
Total	281,471	16	17,424	72,592	76,337	59,680	39,470	14,554	1,286	20	92
Average	93,824	5	5,808	24,197	25,446	19,893	13,157	4,851	429	7	31
Married women, 15-49, 1931	788,291	–	11,478	75,919	123,464	144,005	155,200	147,039	131,186	–	–
Specific fertility rate	119·02	–	506·01	318·72	206·10	138·14	84·77	32·99	3·27	–	–
French—											
Births, 1930	91,493	4	3,808	21,367	25,125	19,800	14,544	6,147	655	13	30
Births, 1931	92,072	2	3,694	20,910	25,923	20,194	14,571	6,067	676	11	24
Births, 1932	90,893	6	3,411	20,068	25,912	20,128	14,458	6,185	692	11	22
Total	274,458	12	10,913	62,345	76,960	60,122	43,573	18,399	2,023	35	76
Average	91,486	4	3,638	20,782	25,653	20,041	14,524	6,133	674	12	25
Married women, 15-49, 1931	360,814	–	6,774	44,894	70,071	69,263	64,980	56,251	48,581	–	–
Specific fertility rate	253·55	–	537·05	462·91	366·10	289·35	223·51	109·03	13·87	–	–
Austrian, n.o.s.—											
Births, 1930	1,222	1	62	343	350	213	179	67	5	–	2
Births, 1931	1,021	–	54	274	303	198	138	46	7	–	1
Births, 1932	855	–	45	220	247	154	119	64	6	–	–
Total	3,098	1	161	837	900	565	436	177	18	–	3
Average	1,033	–	54	279	300	188	145	59	6	–	1
Married women, 15-49, 1931	7,385	–	220	1,260	1,564	1,382	1,297	930	732	–	–
Specific fertility rate	139·88	–	245·45	221·43	191·82	136·03	111·80	63·44	8·20	–	–
Belgian—											
Births, 1930	631	–	32	147	209	127	83	31	2	–	–
Births, 1931	578	–	32	134	173	125	77	32	5	–	–
Births, 1932	588	–	37	145	154	146	75	27	4	–	–
Total	1,797	–	101	426	536	398	235	90	11	–	–
Average	599	–	34	142	179	133	78	30	4	–	–
Married women, 15-49, 1931	4,841	–	71	481	913	1,121	868	790	597	–	–
Specific fertility rate	123·73	–	478·87	295·22	196·06	118·64	89·86	37·97	6·70	–	–
Chinese and Japanese—											
Births, 1930	1,085	–	41	252	289	256	180	53	13	–	1
Births, 1931	1,065	–	36	262	276	260	172	57	2	–	–
Births, 1932	928	–	24	198	248	208	179	62	7	2	–
Total	3,078	–	101	712	813	724	531	172	22	2	1
Average	1,026	–	34	237	271	241	177	57	7	1	–
Married women, 15-49, 1931	4,734	–	65	601	825	1,138	993	661	451	–	–
Specific fertility rate	216·73	–	523·08	394·34	328·48	211·78	178·25	86·23	15·52	–	–
Czech and Slovak—											
Births, 1930	758	–	35	212	277	146	67	18	2	–	1
Births, 1931	825	–	37	222	295	170	83	13	3	–	2
Births, 1932	820	–	40	197	298	179	86	16	4	–	–
Total	2,403	–	112	631	870	495	236	47	9	–	3
Average	801	–	37	210	290	165	79	16	3	–	1
Married women, 15-49, 1931	4,239	–	101	677	1,134	1,019	565	419	324	–	–
Specific fertility rate	188·96	–	366·34	310·19	255·73	161·92	139·82	38·19	9·26	–	–

TABLE 11. Specific fertility rates of married women 15-49 years of age, by racial origin, Canada, 1930-1932—Con.

Item	Total	Age Group									
		Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50 and over	Not Stated
Dutch—											
Births, 1930...	2,246	1	121	582	630	463	319	113	13	1	3
Births, 1931..	2,453	–	140	615	718	493	329	148	10	–	–
Births, 1932..	2,295	–	123	577	639	449	338	151	17	1	–
Total	6,994	1	384	1,774	1,987	1,405	986	412	40	2	3
Average	2,331	–	128	591	662	468	329	137	13	1	1
Married women, 15-49, 1931..	20,061	–	377	2,314	3,459	3,754	3,723	3,358	3,076	–	–
Specific fertility rate..	116·20	–	339·52	255·40	191·38	124·67	88·37	40·80	4·23	–	–
Finnish—											
Births, 1930	847	–	67	287	259	135	64	30	3	–	2
Births, 1931	866	–	70	300	263	134	67	27	3	–	2
Births, 1932	768	–	52	235	241	145	66	25	4	–	–
Total	2,481	–	189	822	763	414	197	82	10	–	4
Average	827	–	63	274	254	138	66	27	3	–	1
Married women, 15-49, 1931..	7,596	–	151	1,074	1,736	1,537	1,239	1,007	852	–	–
Specific fertility rate..	108·87	–	417·22	255·12	146·31	89·79	53·27	26·81	3·52	–	–
German—											
Births, 1930	11,682	–	654	3,244	3,230	2,264	1,517	691	76	–	6
Births, 1931	11,794	–	706	3,339	3,353	2,190	1,529	603	66	–	8
Births, 1932	12,065	–	685	3,319	3,435	2,288	1,582	683	71	–	2
Total	35,541	–	2,045	9,902	10,018	6,742	4,628	1,977	213	–	16
Average	11,847	–	682	3,301	3,339	2,247	1,543	659	71	–	5
Married women, 15-49, 1931..	68,443	–	1,390	9,101	12,701	13,088	12,220	10,728	9,215	–	–
Specific fertility rate..	173·09	–	490·65	362·71	262·89	171·68	126·27	61·43	7·70	–	–
Hebrew—											
Births, 1930	2,167	–	40	648	710	468	249	47	2	–	3
Births, 1931	2,121	–	35	581	796	432	215	56	4	–	2
Births, 1932	2,135	–	44	632	797	431	186	42	3	–	–
Total	6,423	–	119	1,861	2,303	1,331	650	145	9	–	5
Average	2,141	–	40	620	768	444	217	48	3	–	2
Married women, 15-49, 1931..	25,947	–	160	2,706	5,075	4,683	5,094	4,462	3,767	–	–
Specific fertility rate..	82·51	–	250·00	229·12	151·33	94·81	42·60	10·76	0·80	–	–
Hungarian—											
Births, 1930	1,294	–	70	365	423	267	127	38	3	–	1
Births, 1931	1,265	–	92	360	404	252	116	31	6	–	4
Births, 1932	1,254	–	83	317	407	270	130	39	6	–	2
Total	3,813	–	245	1,042	1,234	789	373	108	15	–	7
Average	1,271	–	82	347	411	263	124	36	5	–	2
Married women, 15-49, 1931..	6,602	–	179	1,070	1,626	1,689	982	640	416	–	–
Specific fertility rate..	192·52	–	458·10	324·30	252·77	155·71	126·27	56·25	12·02	–	–
Indian—											
Births, 1930	2,833	1	311	757	656	516	357	148	34	2	51
Births, 1931	2,948	2	329	823	694	503	374	173	29	2	19
Births, 1932	3,346	1	404	900	776	607	430	155	38	2	33
Total	9,127	4	1,044	2,480	2,126	1,626	1,161	476	101	6	103
Average	3,042	1	348	827	709	542	387	159	34	2	34
Married women, 15-49, 1931..	16,521	–	1,072	2,977	3,052	3,119	2,480	2,045	1,776	–	–
Specific fertility rate..	184·13	–	324·63	277·80	232·31	173·77	156·05	77·75	10·14	–	–

TABLE 11. Specific fertility rates of married women 15-49 years of age, by racial origin, Canada, 1930-1932—Con.

Item	Total	Age Group									
		Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50 and over	Not Stated
Italian—											
Births, 1930	2,358	1	193	622	570	499	331	120	15	–	7
Births, 1931	2,250	–	167	608	543	475	319	122	15	–	1
Births, 1932	2,039	–	155	585	480	365	318	121	14	–	1
Total	6,647	1	515	1,815	1,593	1,339	968	363	44	–	9
Average	2,216	–	172	605	531	446	323	121	15	–	3
Married mothers, 15-49, 1931	13,342	–	397	1,857	2,231	2,719	2,449	2,064	1,625	–	–
Specific fertility rate	166·09	–	433·25	325·79	238·01	164·03	131·89	58·62	9·23	–	–
Polish—											
Births, 1930	3,425	–	220	1,060	1,044	514	419	126	16	–	20
Births, 1931	3,683	–	245	1,124	1,161	615	373	127	21	1	16
Births, 1932	3,624	–	233	1,031	1,123	687	389	132	22	1	6
Total	10,732	–	698	3,221	3,328	1,816	1,181	385	59	2	42
Average	3,577	–	233	1,074	1,109	605	394	128	20	1	14
Married mothers, 15-49, 1931	22,394	–	695	4,116	5,036	4,143	3,738	2,760	1,906	–	–
Specific fertility rate	159·73	–	335·25	260·93	220·21	146·03	105·40	46·38	10·49	–	–
Roumanian—											
Births, 1930	382	–	53	155	165	110	69	28	1	–	1
Births, 1931	540	–	46	172	140	85	68	27	2	–	–
Births, 1932	526	–	52	133	136	105	74	24	2	–	–
Total	1,648	–	151	460	441	300	211	79	5	–	1
Average	549	–	60	153	147	100	70	26	2	–	–
Married mothers, 15-49, 1931	4,118	–	183	693	753	794	778	636	381	–	–
Specific fertility rate	133·32	–	273·22	220·78	195·22	125·94	89·97	48·51	6·25	–	–
Russian—											
Births, 1930	1,961	–	115	525	516	383	299	100	20	–	3
Births, 1931	1,684	–	94	463	447	328	250	88	13	–	1
Births, 1932	1,519	–	104	405	408	289	215	89	9	–	–
Total	5,164	–	313	1,393	1,371	1,000	764	277	42	–	4
Average	1,721	–	104	464	457	333	255	92	14	–	1
Married women, 15-49, 1931	12,682	–	433	2,247	2,612	2,101	2,117	1,716	1,456	–	–
Specific fertility rate	135·70		240·18	206·50	174·90	158·50	120·45	63·61	9·62	–	–
Scandinavian—											
Births, 1930	4,407	–	248	1,178	1,220	840	625	265	31	–	–
Births, 1931	4,328	–	227	1,172	1,242	831	621	209	25	–	1
Births, 1932	4,251	–	241	1,144	1,210	840	544	249	23	–	–
Total	12,986	–	716	3,494	3,672	2,611	1,790	723	79	–	1
Average	4,329	–	239	1,165	1,224	837	597	241	26	–	–
Married women, 15-49, 1931	31,003	–	504	3,693	5,582	6,869	6,816	6,225	4,314	–	–
Specific fertility rate	139·63	–	474·21	315·46	219·28	142·61	102·65	46·12	6·03	–	–
Ukrainian—											
Births, 1930	6,272	–	566	2,077	1,656	953	737	238	35	1	9
Births, 1931	6,620	1	577	2,117	1,797	1,074	738	272	42	1	1
Births, 1932	6,678	–	647	2,184	1,821	1,052	748	269	54	–	3
Total	19,570	1	1,690	6,378	5,274	3,079	2,223	779	131	2	13
Average	6,523	–	663	2,126	1,758	1,026	741	260	44	1	4
Married women, 15-49, 1931	33,036	–	1,372	6,079	6,824	6,694	5,769	4,269	3,039	–	–
Specific fertility rate	197·45	–	410·35	349·73	267·62	180·19	128·67	60·90	14·48	–	–

TABLE 12. Specific fertility rates[1] of women 15-49 years of age (all conjugal conditions), by racial origin, Prairie Provinces, 1926, 1931 and 1936

Racial Origin of Mother	Age of Mother						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1926							
All races	**32·6**	**161·9**	**189·8**	**156·2**	**109·5**	**51·1**	**7·2**
British	23·6	123·6	163·3	134·2	89·9	37·0	4·5
English	25·1	129·3	163·1	134·7	91·4	37·7	5·4
Irish	21·0	113·2	161·7	134·9	83·0	32·2	3·7
Scottish	22·9	122·3	164·6	133·1	91·9	39·1	3·6
French	42·0	190·4	229·2	188·8	142·2	74·7	8·1
Belgian	38·9	217·3	195·0	143·2	137·5	50·6	16·3
Central and Eastern European	46·1	237·0	249·8	206·9	158·9	87·2	14·7
Austrian	54·3	228·1	219·8	215·1	153·9	80·0	14·6
Bulgarian	–	416·7	–	–	142·9	–	–
Czech and Slovak	43·8	186·4	223·2	244·6	87·2	47·6	6·4
Finnish	37·0	179·0	207·8	201·6	101·8	70·6	14·6
German	41·4	270·2	306·8	245·7	193·9	112·3	14·5
Greek	71·4	137·9	179·5	160·0	100·0	–	200·0
Hungarian	42·7	226·5	194·9	166·7	130·3	56·5	4·7
Polish	42·6	190·2	205·2	151·8	128·8	59·6	14·9
Roumanian	63·2	318·7	276·8	168·1	185·5	115·4	14·6
Russian	23·7	132·5	175·3	182·0	133·3	70·7	9·9
Serb and Croat	–	307·7	348·8	312·5	216·2	107·1	52·6
Ukrainian	60·8	277·9	250·2	193·1	148·8	78·0	18·1
Chinese	136·4	312·5	583·3	450·0	419·4	263·2	153·8
Dutch	10·8	99·8	142·5	151·0	86·5	53·9	2·1
Hebrew	2·6	98·6	188·3	150·5	62·9	17·3	–
Indian	81·1	213·1	186·0	170·8	127·9	84·5	19·4
Italian	25·8	160·2	177·3	189·8	131·6	88·2	–
Japanese	126·0	300·0	461·5	370·4	–	90·9	–
Negro	71·4	136·4	107·1	96·2	65·6	60·0	–
Scandinavian	27·6	153·2	177·8	150·1	120·3	63·3	9·5
Danish	21·1	153·8	188·6	149·0	93·0	30·8	8·5
Icelandic	19·7	106·6	113·7	163·7	120·2	60·0	16·6
Norwegian	30·1	175·8	196·6	150·8	136·1	73·7	7·8
Swedish	29·2	148·1	180·1	142·8	106·6	59·3	9·1
1931							
All races	**30·5**	**149·3**	**179·7**	**142·0**	**98·6**	**41·8**	**5·4**
British	22·7	116·4	145·2	115·8	75·1	29·9	3·1
English	24·6	120·6	147·5	116·2	75·1	30·1	3·1
Irish	22·0	112·9	141·8	114·1	73·6	31·4	3·3
Scottish	19·6	113·5	143·8	118·0	76·7	27·9	2·9
French	41·2	189·4	204·3	174·4	134·8	69·5	6·6
Belgian	27·7	162·7	185·6	130·9	112·3	38·4	10·4
Central and Eastern European	37·8	191·6	223·8	185·0	137·1	65·3	10·7
Austrian	23·5	138·0	179·1	176·5	130·5	64·5	12·0
Bulgarian	–	125·0	125·0	–	–	–	–
Czech and Slovak	25·5	165·2	197·9	178·7	131·1	32·4	4·7
Finnish	47·9	128·0	187·0	74·1	95·8	63·7	5·7
German	39·3	209·9	255·7	196·6	156·6	73·1	9·5
Greek	–	100·0	354·8	54·1	64·6	58·8	–
Hungarian	67·0	244·4	238·4	177·7	139·1	61·9	10·3
Polish	33·5	151·3	193·4	157·5	101·4	49·9	10·1
Roumanian	33·2	195·0	180·2	127·1	107·3	79·2	9·1
Russian	20·4	118·1	141·8	163·1	129·7	57·3	10·0
Serb and Croat	61·1	253·8	396·4	324·3	250·0	69·0	26·8
Ukrainian	43·7	225·3	238·7	201·8	134·3	67·2	14·0
Chinese	23·8	235·3	361·1	269·2	173·9	160·0	–
Dutch	19·0	128·7	201·0	152·3	118·9	57·3	3·9
Hebrew	2·3	49·3	111·1	89·3	43·2	20·3	2·6
Indian	114·5	283·4	265·7	211·4	180·9	115·0	23·6
Italian	31·7	137·2	119·3	174·7	79·5	40·0	5·9
Japanese	100·0	312·6	400·0	166·7	153·8	–	–
Negro	11·4	92·3	102·0	98·0	36·4	18·2	–
Scandinavian	27·0	142·2	172·4	129·3	104·3	41·4	6·4
Danish	26·8	145·5	158·4	146·5	94·0	31·0	3·0
Icelandic	17·0	113·2	156·1	128·2	90·6	46·6	6·1
Norwegian	28·2	154·7	188·2	143·6	123·0	43·6	6·1
Swedish	28·8	134·5	164·4	102·3	87·3	39·6	8·2

[1] Rates per 1,000 women of age specified.

TABLE 12. Specific fertility rates[1] of women 15-49 years of age (all conjugal conditions), by racial origin, Prairie Provinces, 1926, 1931 and 1936—Con.

Racial Origin of Mother	Age of Mother						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
	1936						
All races	**24·2**	**117·4**	**148·1**	**126·2**	**86·1**	**36·5**	**4·2**
British	17·6	90·9	119·2	99·1	62·4	24·1	2·0
English	17·3	88·1	114·9	95·9	59·5	23·3	1·7
Irish	20·6	101·5	126·0	100·1	66·0	26·9	1·8
Scottish	16·0	87·3	121·4	103·9	65·4	23·2	2·5
French	33·7	147·7	190·2	172·7	119·1	63·2	6·8
Belgian	24·6	171·7	217·1	142·2	125·0	20·2	6·6
Central and Eastern European	27·9	143·1	172·7	149·8	111·8	52·6	8·6
Austrian	14·1	120·5	196·1	145·0	144·6	52·4	13·8
Bulgarian	–	100·0	142·9	100·0	–	–	–
Czech and Slovak	28·9	139·6	150·5	147·5	120·4	41·0	7·8
Finnish	29·6	125·8	139·9	144·3	122·4	41·1	7·6
German	24·2	144·6	180·5	154·5	113·7	57·5	7·7
Greek	–	156·3	172·4	83·3	29·4	40·0	–
Hungarian	41·7	195·7	165·8	153·7	112·1	58·6	13·7
Polish	28·6	118·5	150·0	143·9	93·0	45·2	7·5
Roumanian	31·2	125·7	123·1	157·0	98·8	56·9	12·9
Russian	19·5	121·4	172·0	165·8	134·8	68·0	9·2
Serb and Croat	15·0	219·2	273·8	274·5	120·5	55·6	28·6
Ukrainian	33·3	152·5	174·5	141·9	110·1	45·8	8·9
Chinese	39·2	173·9	381·0	125·0	181·8	–	–
Dutch	17·0	141·2	196·7	176·0	141·8	67·5	8·7
Hebrew	0·8	33·0	94·5	69·1	41·1	7·3	–
Indian	163·9	409·5	386·3	343·5	276·6	143·8	17·8
Italian	11·5	116·9	91·2	71·4	75·1	9·9	–
Japanese	38·5	181·8	421·1	125·0	181·8	153·8	–
Negro	65·2	148·6	101·7	204·5	92·6	42·6	20·4
Scandinavian	23·2	120·5	156·0	126·5	83·8	39·9	4·8
Danish	22·1	130·2	144·1	135·2	95·8	30·9	–
Icelandic	14·7	105·5	149·7	105·2	84·2	37·6	–
Norwegian	25·9	123·1	166·6	133·5	84·1	46·2	6·7
Swedish	22·4	118·7	147·9	122·8	77·9	34·9	5·8

TABLE 13. Married mothers by birthplace and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930

Birthplace and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
All birthplaces	**242,289**	**949,926**	**839,836**	**24,299**	**974,225**	**3·92**	**3·47**	**0·10**	**4·02**
Under 20	13,047	16,323	15,686	541	16,864	1·25	1·20	0·04	1·29
20-24	60,840	117,197	109,149	3,248	120,445	1·93	1·79	0·05	1·98
25-29	66,046	207,460	187,878	5,077	212,537	3·14	2·84	0·08	3·22
30-34	50,915	240,734	212,499	6,105	246,839	4·73	4·17	0·12	4·85
35-39	35,518	232,976	200,853	5,896	238,872	6·56	5·65	0·17	0·73
40-44	14,249	120,251	101,303	3,010	123,261	8·44	7·11	0·21	8·65
45 and over	1,500	14,434	11,976	392	14,826	9·62	7·98	0·26	9·88
Age not stated	174	551	492	30	581	3·17	2·83	0·17	3·34
Canada	**176,061**	**718,423**	**629,037**	**17,271**	**735,694**	**4·08**	**3·57**	**0·10**	**4·18**
Under 20	11,041	13,914	13,351	471	14,385	1·26	1·21	0·04	1·30
20-24	46,063	91,692	84,976	2,472	94,164	1·99	1·84	0·05	2·04
25-29	47,021	156,678	140,807	3,561	160,239	3·33	2·99	0·08	3·41
30-34	35,682	179,839	157,228	4,285	184,124	5·04	4·41	0·12	6·16
35-39	24,893	173,794	147,607	4,103	177,897	0·98	6·93	0·16	7·15
40-44	10,193	91,442	76,005	2,089	93,531	8·97	7·46	0·20	9·18
45 and over	1,065	10,700	8,742	274	10,974	10·05	8·21	0·26	10·30
Age not stated	103	364	321	16	380	3·53	3·12	0·16	3·69
Prince Edward Island	**1,969**	**8,120**	**7,344**	**165**	**8,285**	**4·12**	**3·73**	**0·08**	**4·21**
Under 20	83	118	113	1	119	1·42	1·36	0·01	1·43
20-24	393	775	721	23	798	1·97	1·83	0·06	2·03
25-29	483	1,485	1,377	32	1,617	3·07	2·85	0·07	3·14
30-34	477	2,266	2,048	35	2,301	4·75	4·29	0·07	4·82
36-39	369	2,234	1,995	48	2,282	6·05	5·41	0·13	6·18
40-44	146	1,082	954	22	1,104	7·41	6·53	0·15	7·56
45 and over	15	133	112	4	137	8·87	7·47	0·27	9·13
Age not stated	3	27	24	–	27	9·00	8·00	–	9·00
Nova Scotia	**10,455**	**40,169**	**36,415**	**1,252**	**41,421**	**3·84**	**3·48**	**0·12**	**3·96**
Under 20	829	1,076	1,032	51	1,127	1·30	1·24	0·06	1·36
20-24	2,734	5,666	5,177	164	5,730	2·04	1·89	0·06	2·10
25-29	2,689	8,589	7,874	268	8,857	3·32	3·04	0·10	3·42
30-34	2,087	9,662	8,726	281	9,943	4·63	4·18	0·13	4·76
35-39	1,528	9,689	8,658	307	9,996	6·34	5·67	0·20	6·54
40-44	623	4,984	4,432	163	5,147	8·00	7·11	0·26	8·26
45 and over	65	603	616	18	621	9·28	7·94	0·28	9·55
Age not stated	–	–	–	–	–	–	–	–	–
New Brunswick	**9,804**	**43,115**	**37,467**	**1,048**	**44,163**	**4·40**	**3·82**	**0·11**	**4·50**
Under 20	703	928	875	30	958	1·32	1·24	0·04	1·36
20-24	2,423	5,280	4,835	167	5,447	2·18	2·00	0·07	2·25
25-29	2,603	9,392	8,278	211	9,603	3·76	3·31	0·08	3·84
30-34	1,981	10,438	9,082	261	10,699	6·27	4·58	0·13	6·40
35-39	1,462	10,434	8,805	225	10,659	7·14	6·02	0·15	7·29
40-44	665	5,984	5,045	143	6,127	9·00	7·59	0·22	9·21
45 and over	66	657	545	11	668	9·95	8·26	0·17	10·12
Age not stated	1	2	2	–	2	2·00	2·00	–	2·00
Quebec	**80,834**	**398,859**	**339,137**	**7,259**	**406,118**	**4·93**	**4·20**	**0·09**	**5·02**
Under 20	2,886	3,809	3,585	107	3,916	1·32	1·24	0·04	1·36
20-24	18,390	39,146	35,706	855	40,001	2·13	1·94	0·05	2·18
25-29	22,445	82,292	72,600	1,415	83,707	3·67	3·23	0·06	3·73
30-34	17,871	104,061	88,712	1,842	105,903	5·82	4·90	0·10	5·93
35-39	13,068	105,992	87,559	1,884	107,876	8·11	6·70	0·14	8·25
40-44	6,636	56,583	45,480	1,014	57,597	10·22	8·22	0·18	10·40
45 and over	626	6,930	5,652	141	7,071	11·07	8·87	0·23	11·30
Age not stated	12	46	43	1	47	3·83	3·68	0·08	3·92
Ontario	**48,506**	**156,963**	**144,358**	**5,674**	**162,637**	**3·24**	**2·98**	**0·12**	**3·35**
Under 20	3,571	4,399	4,265	162	4,661	1·23	1·19	0·05	1·28
20-24	12,627	23,276	21,965	791	24,067	1·84	1·74	0·06	1·91
25-29	12,688	35,502	33,087	1,143	36,645	2·80	2·61	0·09	2·89
30-34	10,038	39,004	35,829	1,471	40,475	3·89	3·57	0·16	4·03

TABLE 13. Married mothers by birthplace and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Birthplace and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
Canada—Con.									
Ontario—Con.									
35-39	6,687	34,779	31,424	1,387	36,166	5·20	4·70	0·21	5·41
40-44	2,623	18,039	16,069	625	18,664	6·88	6·13	0·24	7·12
45 and over	227	1,802	1,565	85	1,887	7·94	6·89	0·37	8·31
Age not stated	45	162	154	10	172	3·60	3·42	0·22	3·82
Manitoba	**0,840**	**31,941**	**29,080**	**939**	**32,880**	**3·25**	**2·96**	**0·10**	**3·34**
Under 20	787	944	919	32	976	1·20	1·17	0·04	1·24
20-24	3,159	5,867	5,520	180	6,047	1·86	1·75	0·06	1·91
25-29	2,823	8,618	7,934	242	8,860	3·05	2·81	0·09	3·14
30-34	1,666	7,262	6,617	237	7,499	4·36	3·97	0·14	4·50
35-39	1,010	6,059	5,329	160	6,219	6·00	5·28	0·16	6·16
40-44	361	2,879	2,496	79	2,958	7·98	6·91	0·22	8·19
45 and over	34	312	265	9	321	9·18	7·79	0·26	9·44
Age not etated	-	-	-	-	-	-	-	-	-
Saskatchewan	**6,687**	**18,133**	**16,339**	**425**	**18,558**	**2·71**	**2·44**	**0·06**	**2·78**
Under 20	1,051	1,302	1,262	44	1,346	1·24	1·20	0·04	1·28
20-24	3,067	5,818	5,468	131	5,949	1·90	1·78	0·04	1·94
25-29	1,521	5,013	4,517	117	5,130	3·30	2·97	0·08	3·37
30-34	625	3,089	2,684	62	3,151	4·94	4·29	0·10	5·04
35-39	281	1,784	1,502	39	1,823	6·35	5·35	0·14	6·49
40-44	123	967	785	28	995	7·86	6·38	0·23	8·09
45 and over	15	141	105	4	145	9·40	7·00	0·27	9·67
Age not stated	4	19	16	-	19	4·75	4·00	-	4·75
Alberta	**4,534**	**11,781**	**10,608**	**280**	**12,061**	**2·60**	**2·34**	**0·06**	**2·66**
Under 20	722	851	824	25	876	1·18	1·14	0·03	1·21
20-24	2,064	3,835	3,567	115	3,950	1·86	1·73	0·06	1·91
25-29	1,090	3,494	3,164	77	3,571	3·21	2·90	0·07	3·28
30-34	408	1,922	1,688	35	1,957	4·71	4·14	0·09	4·80
35-39	202	1,319	1,079	22	1,341	6·53	5·34	0·11	6·64
40-44	39	321	254	4	325	8·23	6·51	0·10	8·33
45 and over	4	20	15	-	20	5·00	3·75	-	5·00
Age not stated	5	19	17	2	21	3·80	3·40	0·40	4·20
British Columbia	**2,865**	**7,460**	**6,628**	**150**	**7,610**	**2·60**	**2·31**	**0·05**	**2·66**
Under 20	358	426	417	16	442	1·19	1·16	0·04	1·23
20-24	1,035	1,810	1,719	33	1,843	1·75	1·66	0·03	1·78
25-29	727	1,848	1,672	33	1,881	2·54	2·30	0·05	2·59
30-34	427	1,658	1,427	42	1,700	3·88	3·34	0·10	3·98
35-39	228	1,163	977	16	1,179	5·10	4·29	0·07	5·17
40-44	50	395	310	6	401	7·90	6·20	0·12	8·02
45 and over	9	76	44	1	77	8·44	4·89	0·11	8·56
Age not etated	31	84	62	3	87	2·71	2·00	0·10	2·81
British Isles	**27,833**	**83,475**	**77,744**	**2,945**	**86,420**	**3·00**	**2·79**	**0·11**	**3·10**
Under 20	693	801	784	27	828	1·16	1·13	0·04	1·19
20-24	5,789	9,299	8,915	318	9,617	1·61	1·54	0·05	1·66
25-29	7,979	18,477	17,475	641	19,118	2·32	2·19	0·08	2·40
30-34	6,868	23,347	21,752	800	24,147	3·40	3·17	0·12	3·52
35-39	4,565	20,467	18,852	762	21,229	4·48	4·13	0·17	4·65
40-44	1,764	10,034	9,015	367	10,401	5·69	5·11	0·21	5·90
45 and over	160	1,001	907	26	1,027	6·26	5·67	0·16	6·42
Age not stated	15	49	44	4	53	3·27	2·93	0·27	3·53
England	**17,248**	**53,621**	**49,906**	**1,831**	**55,452**	**3·11**	**2·89**	**0·11**	**3·21**
Under 20	442	511	505	18	529	1·16	1·14	0·04	1·20
20-24	3,484	5,739	5,508	181	5,920	1·65	1·58	0·05	1·70
25-29	4,780	11,593	10,948	383	11,976	2·43	2·29	0·08	2·51
30-34	4,300	15,112	14,081	521	15,633	3·51	3·27	0·12	3·64
35-39	2,946	13,315	12,284	494	13,809	4·52	4·17	0·17	4·69
40-44	1,174	6,649	5,954	210	6,859	5·66	5·07	0·18	5·84
45 and over	110	663	591	20	683	6·03	5·37	0·18	6·21
Age not stated	12	39	35	4	43	3·25	2·92	0·33	3·58

TABLE 13. Married mothers by birthplace and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Birthplace and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
British Isles—Con.									
Ireland	**2,624**	**7,658**	**7,127**	**296**	**7,954**	**2·92**	**2·72**	**0·11**	**3·03**
Under 20	61	68	66	2	70	1·11	1·08	0·03	1·15
20-24	567	865	828	23	888	1·53	1·46	0·04	1·57
25-29	779	1,732	1,639	70	1,802	2·22	2·10	0·09	2·31
30-34	624	2,111	1,950	69	2,180	3·38	3·13	0·11	3·49
35-39	425	1,934	1,781	81	2,015	4·55	4·19	0·19	4·74
40-44	158	907	823	50	957	5·74	5·21	0·32	6·06
45 and over	9	39	38	1	40	4·33	4·22	0·11	4·44
Age not stated	1	2	2	-	2	2·00	2·00	-	2·00
Scotland	**7,310**	**20,193**	**18,887**	**51**	**20,944**	**2·76**	**2·58**	**0·10**	**2·87**
Under 20	170	199	193	7	206	1·17	1·14	0·04	1·21
20-24	1,596	2,452	2,352	104	2,556	1·54	1·47	0·07	1·60
25-29	2,240	4,770	4,520	184	4,954	2·13	2·02	0·08	2·21
30-34	1,779	5,519	5,177	188	5,707	3·10	2·91	0·11	3·21
35-39	1,090	4,732	4,361	165	4,897	4·34	4·00	0·15	4·49
40-44	394	2,229	2,013	98	2,327	5·66	5·11	0·25	5·91
45 and over	39	284	264	5	289	7·28	6·77	0·13	7·41
Age not stated	2	8	7	-	8	4·00	3·50	-	4·00
Wales	**580**	**1,772**	**1,621**	**64**	**1,836**	**3·06**	**2·79**	**0·11**	**3·17**
Under 20	20	23	20	-	23	1·15	1·00	-	1·15
20-24	132	227	211	10	237	1·72	1·60	0·08	1·80
25-29	157	328	316	4	332	2·09	2·01	0·03	2·11
30-34	145	537	489	22	559	3·70	3·37	0·15	3·80
35-39	88	416	361	19	435	4·73	4·10	0·22	4·94
40-44	36	226	210	9	235	6·28	5·83	0·25	6·53
45 and over	2	15	14	-	15	7·50	7·00	-	7·50
Age not stated	-	-	-	-	-	-	-	-	-
British Possessions	**1,503**	**5,619**	**4,985**	**186**	**5,805**	**3·74**	**3·32**	**0·12**	**3·80**
Under 20	39	47	46	2	49	1·21	1·18	0·05	1·26
20-24	319	573	545	15	588	1·80	1·71	0·05	1·84
25-29	451	1,260	1,144	41	1,301	2·79	2·54	0·09	2·88
30-34	344	1,517	1,343	54	1,571	4·41	3·90	0·16	4·57
35-39	259	1,541	1,352	46	1,587	5·95	5·22	0·18	6·13
40-44	77	562	455	26	588	7·30	5·91	0·34	7·64
45 and over	12	112	94	2	114	9·33	7·83	0·17	9·50
Age not stated	2	7	6	-	7	3·50	3·00	-	3·50
Newfoundland	**1,077**	**4,415**	**3,891**	**133**	**4,548**	**4·10**	**3·61**	**0·12**	**4·22**
Under 20	30	37	36	2	39	1·23	1·20	0·07	1·30
20-24	232	429	408	8	437	1·85	1·76	0·03	1·88
25-29	309	941	843	26	967	3·05	2·73	0·08	3·13
30-34	240	1,173	1,031	43	1,216	4·89	4·30	0·18	5·07
35-39	196	1,261	1,106	37	1,298	6·43	5·64	0·19	6·62
40-44	59	474	378	15	489	8·03	6·41	0·25	8·29
45 and over	10	94	84	2	96	9·40	8·40	0·20	9·60
Age not stated	1	6	5	-	6	6·00	5·00	-	6·00
Europe	**23,570**	**91,386**	**81,381**	**2,493**	**93,879**	**3·88**	**3·45**	**0·11**	**3·98**
Under 20	673	801	772	19	820	1·19	1·15	0·03	1·22
20-24	5,392	9,344	8,763	274	9,618	1·73	1·63	0·05	1·78
25-29	6,973	19,769	17,993	552	20,321	2·84	2·58	0·08	2·91
30-34	5,136	22,909	20,214	603	23,512	4·46	3·94	0·12	4·58
35-39	3,730	24,312	21,409	641	24,953	6·52	5·74	0·17	6·69
40-44	1,446	12,315	10,569	326	12,641	8·52	7·31	0·23	8·74
45 and over	183	1,845	1,578	70	1,915	10·08	8·62	0·38	10·46
Age not stated	37	91	83	8	99	2·46	2·24	0·22	2·68
Austria	**2,604**	**13,833**	**12,132**	**337**	**14,170**	**5·31**	**4·66**	**0·13**	**5·44**
Under 20	56	73	69	2	75	1·30	1·23	0·04	1·34
20-24	505	1,001	927	23	1,024	1·98	1·84	0·05	2·03
25-29	642	2,409	2,144	48	2,457	3·75	3·34	0·07	3·83
30-34	604	3,501	3,129	89	3,690	5·96	5·18	0·15	6·11

TABLE 13. Married mothers by birthplace and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Birthplace and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
Europe—Con.									
Austria—Con.									
35-39	564	4,472	3,944	114	4,586	7·93	6·99	0·20	8·13
40-44	200	1,976	1,675	51	2,027	9·88	8·38	0·26	10·14
45 and over	28	297	240	8	305	10·61	8·57	0·29	10·89
Age not stated	5	4	4	2	6	0·80	0·80	0·40	1·20
Belgium	**517**	**1,682**	**1,521**	**44**	**1,726**	**3·25**	**2·94**	**0·09**	**3·34**
Under 20	22	24	24	–	24	1·09	1·09	–	1·09
20-24	98	161	153	1	162	1·64	1·56	0·01	1·65
25-29	167	421	389	11	432	2·52	2·33	0·07	2·59
30-34	120	451	400	15	466	3·76	3·33	0·13	3·88
35-39	75	392	344	9	401	5·23	4·59	0·12	5·35
40-44	33	203	184	6	209	6·15	5·58	0·18	6·33
45 and over	2	30	27	2	32	15·00	13·50	1·00	16·00
Age not stated	–	–	–	–	–	–	–	–	–
Denmark	**400**	**1,047**	**957**	**46**	**1,093**	**2·62**	**2·39**	**0·12**	**2·73**
Under 20	14	15	14	–	15	1·07	1·00	–	1·07
20-24	104	147	141	4	151	1·41	1·36	0·04	1·45
25-29	127	252	232	16	268	1·98	1·83	0·13	2·11
30-34	92	278	258	17	295	3·02	2·80	0·18	3·21
35-39	44	203	184	5	208	4·61	4·18	0·11	4·73
40-44	19	152	128	4	156	8·00	6·74	0·21	8·21
45 and over	–	–	–	–	–	–	–	–	–
Age not stated	–	–	–	–	–	–	–	–	–
Finland	**696**	**1,534**	**1,407**	**68**	**1,602**	**2·20**	**2·02**	**0·10**	**2·30**
Under 20	25	27	26	–	27	1·08	1·04	–	1·08
20-24	192	261	255	8	269	1·36	1·33	0·04	1·40
25-29	247	440	414	16	456	1·78	1·68	0·06	1·85
30-34	139	313	275	18	331	2·25	1·98	0·13	2·38
35-39	59	305	263	17	322	5·17	4·46	0·29	5·46
40-44	30	164	152	9	173	5·47	5·07	0·30	5·77
45 and over	3	15	13	–	15	5·00	4·33	–	5·00
Age not stated	1	9	9	–	9	9·00	9·00	–	9·00
France	**397**	**1,620**	**1,489**	**42**	**1,668**	**4·10**	**3·75**	**0·11**	**4·20**
Under 20	5	7	6	–	7	1·40	1·20	–	1·40
20-24	75	144	142	4	148	1·92	1·89	0·05	1·97
25-29	102	309	285	8	317	3·03	2·79	0·08	3·11
30-34	99	470	433	11	481	4·75	4·37	0·11	4·86
35-39	83	437	403	13	450	5·27	4·86	0·16	5·42
40-44	29	219	191	5	224	7·55	6·59	0·17	7·72
45 and over	4	40	29	1	41	10·00	7·25	0·25	10·25
Age not stated	–	–	–	–	–	–	–	–	–
Germany	**983**	**2,857**	**2,644**	**92**	**2,949**	**2·91**	**2·69**	**0·09**	**3·00**
Under 20	34	40	39	1	41	1·18	1·15	0·03	1·21
20-24	276	463	441	15	478	1·68	1·60	0·05	1·73
25-29	317	775	728	28	803	2·44	2·30	0·09	2·53
30-34	202	637	582	25	662	3·15	2·88	0·12	3·28
35-39	90	460	421	11	471	5·11	4·68	0·12	5·23
40-44	60	431	383	12	443	7·18	6·38	0·20	7·38
45 and over	4	51	50	–	51	1·28	1·25	–	1·28
Age not stated	–	–	–	–	–	–	–	–	–
Holland	**327**	**1,050**	**997**	**23**	**1,079**	**3·23**	**3·05**	**0·07**	**3·30**
Under 20	9	8	8	1	9	0·89	0·89	0·11	1·00
20-24	66	107	105	3	110	1·62	1·59	0·05	1·67
25-29	109	279	267	7	286	2·56	2·45	0·06	2·62
30-34	77	274	256	6	280	3·56	3·32	0·08	3·64
35-39	48	268	247	4	272	5·58	5·15	0·08	5·67
40-44	17	111	105	2	113	6·53	6·18	0·12	6·65
45 and over	1	9	9	–	9	9·00	9·00	–	9·00
Age not stated	–	–	–	–	–	–	–	–	–

TABLE 13. Married mothers by birthplace and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Birthplace and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alive	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
Europe—Con.									
Hungary	**1,215**	**4,258**	**3,668**	**113**	**4,371**	**3·50**	**3·02**	**0·09**	**3·60**
Under 20	44	49	47	2	51	1·11	1·07	0·05	1·16
20-24	284	468	432	13	481	1·65	1·52	0·05	1·69
25-29	415	1,208	1,061	38	1,246	2·91	2·56	0·09	3·00
30-34	281	1,212	1,003	41	1,253	4·31	3·57	0·15	4·46
35-39	139	849	709	16	865	6·11	5·10	0·12	6·22
40-44	46	429	378	3	432	9·33	8·22	0·07	9·39
45 and over	5	42	37	–	42	8·40	7·40	–	8·40
Age not stated	1	1	1	–	1	1·00	1·00	–	1·00
Italy	**1,822**	**7,453**	**6,561**	**235**	**7,688**	**4·09**	**3·60**	**0·13**	**4·22**
Under 20	72	89	89	1	90	1·24	1·24	0·01	1·25
20-24	369	759	700	25	784	2·06	1·90	0·07	2·12
25-29	459	1,461	1,314	50	1,511	3·18	2·86	0·11	3·29
30-34	451	1,989	1,767	43	2,032	4·41	3·92	0·10	4·51
35-39	330	1,972	1,718	76	2,048	5·98	5·21	0·23	6·21
40-44	121	1,015	833	29	1,044	8·39	6·88	0·24	8·63
45 and over	15	150	125	11	161	10·00	8·33	0·73	10·73
Age not stated	5	18	15	–	18	3·60	3·00	–	3·60
Norway	**720**	**2,470**	**2,321**	**71**	**2,541**	**3·40**	**3·20**	**0·10**	**3·50**
Under 20	11	13	13	–	13	1·18	1·18	–	1·18
20-24	118	193	186	1	194	1·64	1·58	0·01	1·64
25-29	207	486	467	23	509	2·35	2·26	0·11	2·46
30-34	160	563	531	18	581	3·39	3·20	0·11	3·50
35-39	136	636	588	16	652	4·68	4·32	0·12	4·70
40-44	77	493	458	8	501	6·40	5·95	0·10	6·51
45 and over	11	86	78	5	91	7·82	7·09	0·45	8·27
Age not stated	–	–	–	–	–	–	–	–	–
Poland	**5,325**	**19,217**	**17,124**	**513**	**19,730**	**3·61**	**3·22**	**0·10**	**3·71**
Under 20	154	187	177	6	193	1·21	1·15	0·04	1·25
20-24	1,396	2,265	2,118	76	2,341	1·62	1·52	0·05	1·68
25-29	1,673	4,513	4,119	124	4,637	2·70	2·46	0·07	2·77
30-34	1,035	4,639	4,049	115	4,754	4·48	3·91	0·11	4·59
35-39	770	5,057	4,462	118	5,175	6·57	5·79	0·15	6·72
40-44	245	2,117	1,819	53	2,170	8·64	7·42	0·22	8·86
45 and over	39	413	357	18	431	10·59	9·15	0·46	11·05
Age not stated	13	26	23	3	29	2·00	1·77	0·23	2·23
Roumania	**1,124**	**5,088**	**4,367**	**177**	**5,265**	**4·53**	**3·89**	**0·16**	**4·68**
Under 20	38	49	45	1	50	1·29	1·18	0·03	1·32
20-24	220	465	429	22	487	2·03	1·87	0·10	2·13
25-29	323	1,028	907	29	1,057	3·18	2·81	0·09	3·27
30-34	281	1,429	1,211	59	1,488	5·09	4·31	0·21	5·30
35-39	178	1,414	1,219	24	1,438	7·94	6·85	0·13	8·08
40-44	65	619	483	35	654	9·52	7·43	0·54	10·06
45 and over	8	78	67	7	85	9·75	8·38	0·88	10·63
Age not stated	2	6	6	–	6	3·00	3·00	–	3·00
Russia	**4,971**	**21,611**	**19,265**	**484**	**22,095**	**4·35**	**3·88**	**0·10**	**4·44**
Under 20	114	136	132	5	141	1·19	1·16	0·04	1·24
20-24	1,095	1,928	1,814	46	1,974	1·76	1·66	0·04	1·80
25-29	1,358	4,109	3,781	97	4,206	3·03	2·78	0·07	3·10
30-34	1,085	5,222	4,688	89	5,311	4·81	4·32	0·08	4·89
35-39	890	6,206	5,419	152	6,358	6·97	6·09	0·17	7·14
40-44	377	3,496	2,995	81	3,577	9·27	7·94	0·21	9·49
45 and over	45	492	416	12	504	10·93	9·24	0·27	11·20
Age not stated	7	22	20	2	24	3·14	2·86	0·29	3·43

TABLE 13. Married mothers by birthplace and age, and total and average number of their children born alive, now living, born dead and born alive or dead, Canada, 1930—Con.

Birthplace and Age of Mother	Mothers	Children							
		Total				Average			
		Born Alivo	Now Living	Born Dead	Born Alive or Dead	Born Alive	Now Living	Born Dead	Born Alive or Dead
Europe—Con.									
Sweden	**630**	**2,320**	**2,146**	**50**	**2,370**	**3·68**	**3·41**	**0·08**	**3·76**
Under 20	17	19	19	–	19	1·12	1·12	–	1·12
20-24	125	232	214	5	237	1·86	1·71	0·04	1·90
25-29	177	452	432	9	461	2·55	2·44	0·05	2·60
30-34	119	468	430	4	472	3·93	3·61	0·03	3·97
35-39	128	668	617	22	690	5·22	4·82	0·17	5·39
40-44	53	375	336	8	383	7·08	6·34	0·15	7·23
45 and over	11	106	98	2	108	9·64	8·91	0·18	9·82
Age not stated	–	–	–	–	–	–	–	–	–
Asia	**1,233**	**4,878**	**4,536**	**91**	**4,969**	**3·96**	**3·68**	**0·07**	**4·03**
Under 20	30	42	40	–	42	1·40	1·33	–	1·40
20-24	252	504	480	11	515	2·00	1·90	0·04	2·04
25-29	336	1,039	993	24	1,063	3·09	2·96	0·07	3·16
30-34	305	1,383	1,288	23	1,406	4·53	4·22	0·08	4·61
35-39	222	1,340	1,223	26	1,366	6·04	5·51	0·12	6·15
40-44	71	452	401	7	459	6·37	5·65	0·10	6·46
45 and over	15	113	106	–	113	7·53	7·07	–	7·53
Age not stated	2	5	5	–	5	2·50	2·50	–	2·50
China	**193**	**984**	**936**	**7**	**991**	**5·10**	**4·85**	**0·04**	**5·13**
Under 20	2	2	2	–	2	1·00	1·00	–	1·00
20-24	32	67	63	–	67	2·09	1·97	–	2·09
25-29	35	143	137	1	144	4·09	3·91	0·03	4·12
30-34	56	310	297	1	311	5·54	5·30	0·02	5·55
35-39	46	311	297	2	313	6·76	6·46	0·04	6·80
40-44	15	92	86	3	95	6·13	5·73	0·20	6·33
45 and over	7	59	54	–	59	8·43	7·71	–	8·43
Age not stated	–	–	–	–	–	–	–	–	–
Japan	**821**	**2,994**	**2,812**	**59**	**3,053**	**3·65**	**3·43**	**0·07**	**3·72**
Under 20	19	25	24	–	25	1·32	1·26	–	1·32
20-24	175	343	327	6	349	1·96	1·87	0·03	1·99
25-29	240	708	684	17	725	2·95	2·85	0·07	3·02
30-34	201	857	800	18	875	4·26	3·98	0·09	4·35
35-39	139	790	728	15	805	5·68	5·24	0·11	5·79
40-44	40	228	208	2	231	5·70	5·20	0·07	5·77
45 and over	6	41	39	–	41	6·83	6·50	–	6·83
Age not stated	1	2	2	–	2	2·00	2·00	–	2·00
United States	**11,964**	**45,747**	**41,791**	**1,305**	**47,052**	**3·82**	**3·49**	**0·11**	**3·93**
Under 20	566	712	687	22	734	1·26	1·21	0·04	1·30
20-24	2,994	5,726	5,414	157	5,883	1·91	1·81	0·05	1·96
25-29	3,256	10,159	9,393	257	10,416	3·12	2·88	0·08	3·20
30-34	2,552	11,633	10,577	337	11,970	4·56	4·14	0·13	4·69
35-39	1,837	11,458	10,352	318	11,776	6·24	5·64	0·17	6·41
40-44	691	5,391	4,815	194	5,585	7·80	6·97	0·28	8·08
45 and over	64	653	539	20	673	10·20	8·42	0·31	10·52
Age not statod	4	15	14	–	15	3·75	3·50	–	3·75

TABLE 14. Live births in Canada by residence of mother, and birth rates (crude, expected and standardized) for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, 1930-1932

County or Census Division and City, Town, etc.	No. of Births by Residence of Mother				Population, 1931	Birth Rates per 1,000 Population		
	1930	1931	1932	Average, 1930-32		Crude	Expected	Standardized[1]
CANADA[2]	243,495	240,473	235,666	239,878	10,362,833	23·1	23·0	23·1
Prince Edward Island	1,752	1,879	2,028	1,886	88,038	21·4	19·4	25·4
Kings	315	334	363	337	19,147	17·6	17·1	23·7
Prince	752	783	875	803	31,500	25·5	19·2	30·5
Queens	685	762	790	746	37,391	20·0	20·8	22·0
Charlottetown, c	241	263	284	263	14,101	18·7	25·4	16·0
Remaining parts	444	499	506	483	23,290	20·7	18·0	26·4
Nova Scotia	11,333	11,614	11,630	11,526	512,846	22·5	20·8	24·8
Annapolis	324	298	329	317	16,297	19·5	18·8	23·7
Antigonish	164	182	168	171	10,073	17·0	17·6	22·2
Cape Breton	2,472	2,492	2,396	2,453	92,419	26·5	20·5	29·7
Sydney, o	566	592	541	566	23,089	24·5	22·7	24·9
Glace Bay, t	601	616	610	609	20,706	29·4	21·3	31·7
New Waterford, t	293	307	262	287	7,745	37·1	21·0	40·5
North Sydney, t	171	170	147	163	6,139	26·6	21·5	28·4
Sydney Mines, t	220	244	230	231	7,769	29·7	20·0	34·3
Remaining parts	621	563	606	597	26,971	22·1	17·9	28·3
Colchester	568	572	573	571	25,051	22·8	21·7	24·2
Truro, t	160	162	176	166	7,901	21·0	28·2	17·1
Remaining parts	408	410	397	405	17,150	23·6	18·7	29·1
Cumberland	812	793	827	811	36,366	22·3	20·7	24·8
Amherst, t	109	123	128	120	7,450	16·1	23·0	16·1
Springhill, t	193	184	172	183	6,355	28·8	21·6	30·7
Remaining parts	510	486	527	508	22,561	22·5	19·6	26·4
Digby	386	432	416	411	18,353	22·4	17·8	29·0
Guysborough	369	374	384	376	15,443	24·3	17·7	31·6
Halifax	2,257	2,386	2,411	2,351	100,204	23·5	25·2	21·4
Halifax, c	1,380	1,429	1,421	1,410	59,275	23·8	28·2	19·4
Dartmouth, t	194	197	193	195	9,100	21·4	25·4	19·4
Remaining parts	683	760	797	747	31,829	23·5	19·6	27·6
Hants	459	489	498	482	19,393	24·9	19·5	29·2
Inverness	372	415	433	407	21,055	19·3	15·6	28·6
Kings	496	484	499	493	24,357	20·2	20·8	22·4
Lunenburg	626	572	599	599	31,674	18·9	20·5	21·2
Pictou	767	773	757	766	39,018	19·6	21·0	21·4
New Glasgow, t	193	168	171	177	8,858	20·0	24·6	18·7
Stellarton, t	121	127	134	127	5,002	25·4	22·4	26·1
Remaining parts	453	478	452	461	25,158	18·3	19·6	21·5
Queens	225	262	230	239	10,612	22·5	20·5	25·2
Richmond	213	242	239	231	11,098	20·8	16·4	29·2
Shelburne	275	287	286	283	12,485	22·7	18·7	27·8
Victoria	126	126	148	133	8,009	16·6	16·1	23·7
Yarmouth	422	435	437	431	20,939	20·6	20·1	23·6
Yarmouth, t	135	162	149	149	7,005	21·1	25·1	19·4
Remaining parts	287	273	288	283	13,884	20·4	17·4	26·9
New Brunswick	10,500	10,756	10,774	10,677	408,219	26·2	21·1	28·5
Albert	170	169	160	166	7,679	21·6	19·3	25·8
Carleton	415	440	429	428	20,796	20·6	20·0	23·7
Charlotte	469	414	431	438	21,337	20·5	21·0	22·4
Gloucester	1,647	1,559	1,611	1,572	41,914	37·5	18·7	46·2
Kent	698	729	754	727	23,478	31·0	17·3	41·3
Kings	351	378	357	362	19,807	18·3	19·4	21·7
Madawaska	948	896	935	926	24,527	37·8	20·6	42·2
Edmundston, t	280	269	243	264	6,430	41·1	26·3	35·9
Remaining parts	668	627	692	662	18,097	36·6	18·5	45·4
Northumberland	932	948	890	923	34,124	27·0	19·3	32·2
Queens	210	232	214	219	11,219	19·5	18·4	24·4
Restigouche	1,021	1,142	1,044	1,069	29,859	35·8	20·7	39·8
Campbellton, t	239	197	187	208	6,505	32·0	26·0	28·3
Remaining parts	782	945	857	861	23,354	36·9	19·3	44·0
St. John	1,254	1,272	1,347	1,291	61,613	21·0	25·4	19·0
Saint John, c	1,053	1,049	1,094	1,065	47,514	22·4	26·3	19·6
Remaining parts	201	223	253	226	14,099	16·0	22·1	16·7
Sunbury	152	173	189	171	6,999	24·4	20·0	28·1
Victoria	450	434	421	435	14,907	29·2	19·1	35·1
Westmorland	1,214	1,277	1,280	1,257	57,506	21·9	23·0	21·9
Moncton, c	476	492	454	474	20,689	22·9	29·0	18·2
Remaining parts	738	785	826	783	36,817	21·3	19·6	24·9
York	669	693	712	691	32,454	21·3	22·1	22·1
Fredericton, c	170	147	155	157	8,830	17·8	26·6	15·4
Remaining parts	499	546	557	534	23,624	22·6	20·4	25·4

[1] The standardized rates were computed from the crude and expected rates carried to two places of decimals.
[2] Exclusive of Yukon and the Northwest Territories.

TABLE 14. Live births in Canada by residence of mother, and birth rates (crude, expected and standardized) for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, 1930-1932—Con.

County or Census Division and City, Town, etc.	No. of Births by Residence of Mother				Population, 1931	Birth Rates per 1,000 Population		
	1930	1931	1932	Average, 1930-32		Crude	Expected	Standardized
Quebec	**83,926**	**83,859**	**82,424**	**83,403**	**2,874,255**	**29·0**	**23·9**	**27·9**
Abitibi	907	907	975	930	23,692	39·3	18·4	49·1
Argenteuil	404	404	427	412	18,976	21·7	20·1	24·9
Arthabaska	858	854	897	870	27,159	32·0	21·0	35·1
Victoriaville, t.	218	221	218	219	6,213	35·2	26·4	30·7
Remaining parts	640	633	679	651	20,946	31·1	19·4	36·9
Bagot	497	493	552	514	16,914	30·4	20·9	33·5
Beauce	1,635	1,680	1,674	1,663	44,793	37·1	20·1	42·5
Beauharnois	537	665	671	624	25,163	24·8	22·6	25·3
Valleyfield, c.	338	350	385	358	11,411	31·4	24·9	29·0
Remaining parts	199	315	286	267	13,752	19·4	20·7	21·6
Bellechasse	719	775	735	743	22,006	33·8	18·7	41·5
Berthier	527	554	521	534	19,506	27·4	21·4	29·4
Bonaventure	1,089	1,068	1,141	1,099	32,432	33·9	18·0	43·3
Brome	194	205	224	208	12,433	16·7	19·1	20·1
Chambly	512	495	493	500	26,801	18·7	23·2	18·5
Longueuil, c.	139	140	119	133	5,407	24·6	23·9	23·7
St-Lambert, c.	90	84	65	80	6,075	13·2	26·8	11·3
Remaining parts	283	271	309	288	15,319	18·8	21·6	20·0
Champlain	2,071	2,147	2,034	2,084	59,935	34·8	20·8	38·4
Cap-de-la-Madeleine, c.	359	347	293	333	8,748	38·1	22·2	39·5
Grand'Mère, c.	221	219	212	217	6,461	33·6	22·6	34·2
La Tuque, t.	305	347	284	312	7,871	39·6	22·1	41·2
Remaining parts	1,186	1,234	1,245	1,222	36,855	33·2	19·9	38·3
Charlevoix	835	798	830	821	22,940	35·8	21·4	38·5
Châteauguay	303	310	300	304	13,125	23·2	20·3	26·2
Chicoutimi	2,601	2,357	2,418	2,459	55,724	44·1	21·3	47·7
Chicoutimi, c.	498	493	560	517	11,877	43·5	23·1	43·4
Jonquière	496	413	414	441	9,448	46·7	21·6	49·7
Remaining parts	1,607	1,451	1,444	1,501	34,399	43·6	20·6	48·8
Compton[3]	537	555	527	540	21,917	24·6	19·6	28·9
Deux-Montagnes	377	379	374	377	14,284	26·4	20·8	29·2
Dorchester	1,028	1,031	1,022	1,027	27,994	36·7	19·2	43·9
Drummond	781	845	926	851	26,179	32·5	22·6	33·1
Drummondville, t.	319	295	349	321	6,609	48·6	29·8	37·5
Remaining parts	462	550	577	530	19,570	27·1	20·2	30·9
Frontenac	967	1,014	925	969	25,681	37·7	19·2	45·1
Gaspé	1,405	1,451	1,438	1,431	37,675	38·0	18·7	46·7
Hull	2,103	2,061	1,948	2,037	63,870	31·9	21·5	34·1
Hull, c.	1,065	1,009	894	989	29,433	33·6	23·3	33·2
Remaining parts	1,038	1,052	1,054	1,048	34,437	30·4	20·0	35·0
Huntingdon	274	266	245	262	12,345	21·2	19·1	25·5
Iberville	239	248	216	234	9,402	24·9	21·0	27·3
Iles-de-la-Madeleine[4]	276	300	335	304	7,942	38·3	19·6	44·8
Joliette	856	880	888	875	27,585	31·7	22·0	33·1
Joliette, c.	329	344	346	340	10,765	31·6	25·5	28·4
Remaining parts	527	536	542	535	16,820	31·8	19·8	36·9
Kamouraska	790	786	755	777	23,954	32·4	19·0	39·4
Labelle	707	752	799	753	20,140	37·4	19·2	44·8
Lac-St-Jean	2,214	2,240	2,343	2,266	50,253	45·1	20·0	51·8
Laprairie	357	349	349	352	13,491	26·1	20·8	28·9
L'Assomption	424	481	436	447	15,323	29·2	21·3	31·4
Lévis	1,012	986	966	988	35,656	27·7	22·3	28·5
Lévis, c.	298	282	275	285	11,724	24·3	23·7	23·6
Lauzon, t.	196	221	182	200	7,084	28·2	24·4	26·6
Remaining parts	518	483	509	503	16,848	29·9	20·5	33·5
L'Islet	643	622	648	638	19,404	32·9	20·0	37·7
Lotbinière	746	734	806	762	23,034	33·1	19·2	39·6
Maskinongé	509	483	548	513	16,039	32·0	21·6	34·1
Matane	1,980	1,854	1,799	1,878	45,272	41·5	19·7	48·3
Mégantic	1,282	1,167	1,188	1,212	35,492	34·1	20·7	37·9
Thetford Mines, c.	536	421	371	443	10,701	41·4	23·6	40·3
Remaining parts	746	746	817	770	24,791	31·1	19·4	36·7
Missisquoi	458	447	460	455	19,636	23·2	22·6	23·6
Montcalm	395	410	413	406	13,865	29·3	20·3	33·2
Montmagny	629	661	651	647	20,239	32·0	20·1	36·5
Montmorency	577	566	545	563	16,955	33·2	21·5	35·6
Montreal and Jesus Islands[5]	24,218	23,791	22,845	23,618	1,020,018	23·2	28·2	18·9
Lachine, c.	399	461	393	418	18,630	22·4	24·9	20·7
Montreal, c.	20,646	20,068	19,191	19,968	818,577	24·4	28·0	20·0
Outremont, c.	260	211	251	241	28,641	8·4	35·1	5·5
Verdun, c.	1,463	1,552	1,506	1,507	60,745	24·8	28·9	19·7
Westmount, c.	199	156	165	173	24,235	7·1	37·8	4·3
St-Laurent, t.	149	146	138	144	5,348	26·9	28·0	22·1
Remaining parts	1,102	1,197	1,201	1,167	63,842	18·3	24·2	17·3
Napierville	210	220	185	205	7,600	27·0	19·6	31·6
Nicolet	857	894	868	873	28,673	30·4	21·0	33·4
Papineau	876	921	896	898	29,246	30·7	19·1	37·0
Pontiac	551	531	556	546	21,241	25·7	18·2	32·5

[3] Including Compton township of Sherbrooke County.
[4] Usually considered as part of Gaspé County.
[5] Includes Laval and Hochelaga.

TABLE 14. Live births in Canada by residence of mother, and birth rates (crude, expected and standardized) for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, 1930-1932—Con.

County or Census Division and City, Town, etc.	No. of Births by Residence of Mother				Population, 1931	Birth Rates per 1,000 Population		
	1930	1931	1932	Average, 1930-32		Crude	Expected	Standardized
Quebec—Con.								
Portneuf	1,218	1,158	1,147	1,174	35,890	32·7	21·6	34·8
Quebec	5,354	5,551	5,280	5,395	170,915	31·6	26·9	27·0
Quebec, c.	4,348	4,385	4,194	4,309	130,594	33·0	27·7	27·4
Remaining parts	1,006	1,166	1,086	1,086	40,321	26·9	24·0	25·8
Richelieu	585	629	572	595	21,483	27·7	22·6	28·2
Sorel, c.	306	316	279	300	10,320	29·1	23·2	28·9
Remaining parts	279	313	293	295	11,163	26·4	22·0	27·6
Richmond	774	809	709	764	24,956	30·6	20·5	34·3
Rimouski	1,022	1,204	1,269	1,165	33,151	35·1	21·1	38·4
Rimouski, t.	240	241	237	241	5,589	43·1	25·6	38·7
Remaining parts	776	963	1,032	924	27,562	33·5	20·1	38·3
Rouville	324	351	350	342	13,776	24·8	21·7	26·3
Saguenay[6]	748	719	774	747	19,577	38·2	19·3	45·4
Shefford	844	894	856	865	28,262	30·6	21·9	32·1
Granby, c.	341	389	382	371	10,587	35·0	26·4	30·5
Remaining parts	503	505	474	494	17,675	27·9	19·2	33·4
Sherbrooke[7]	954	939	890	928	37,386	24·8	26·6	21·4
Sherbrooke, c.	775	728	698	734	28,933	25·4	28·2	20·7
Remaining parts[7]	179	211	192	194	8,453	23·0	21·4	24·6
Soulanges	242	224	223	230	9,099	25·3	20·2	28·7
Stanstead	652	643	612	636	25,118	25·3	22·4	26·0
Magog, t.	222	202	242	222	6,302	35·2	25·2	32·1
Remaining parts	430	441	370	414	18,816	22·0	21·4	23·6
St-Hyacintbe	656	624	619	633	25,854	24·5	25·7	21·9
St-Hyacinthe, c.	371	362	356	363	13,448	27·0	29·1	21·3
Remaining parts	285	262	263	270	12,406	21·8	22·0	22·7
St-Jean	471	457	444	457	17,649	25·9	24·1	24·7
St-Jean, c.	312	309	296	306	11,256	27·2	26·7	23·5
Remaining parts	159	148	148	152	6,393	23·8	19·7	27·7
St-Maurice	2,606	2,459	2,363	2,476	69,095	35·8	24·4	33·8
Sbawinigan Falls, c.	652	620	624	632	15,345	41·2	24·7	38·3
Trois-Rivières, c.	1,355	1,324	1,226	1,302	35,450	36·7	26·8	31·5
Remaining parts	599	615	513	542	18,300	29·6	19·4	35·1
Temiskaming	755	814	853	807	20,609	39·2	20·2	44·6
Témiscouata	1,812	1,836	1,776	1,808	50,294	35·9	20·1	41·2
Rivière-du-Loup, c.	237	237	231	235	8,499	27·7	24·6	25·9
Remaining parts	1,575	1,599	1,545	1,573	41,795	37·6	19·1	45·2
Terrebonne	1,219	1,173	1,171	1,188	38,611	30·8	22·8	31·0
St.-Jérôme, t.	356	320	292	323	8,967	36·0	26·8	30·9
Remaining parts	863	853	879	865	29,644	29·2	21·6	31·1
Vaudreuil	267	288	276	277	12,015	23·1	23·0	23·1
Verchères	352	348	362	354	12,603	28·1	21·5	30·0
Wolfe	693	564	581	679	16,911	34·2	18·8	41·9
Yamaska	511	538	505	518	16,820	30·8	20·6	34·4
Ontario	**71,029**	**69,017**	**66,678**	**68,908**	**3,431,683**	**20·1**	**23·9**	**19·3**
Addington	159	168	145	157	6,879	22·8	18·9	27·8
Algoma	1,113	1,129	1,201	1,148	46,444	24·7	21·0	27·0
Snult Ste. Marie, c.	592	676	667	678	23,082	25·0	23·7	24·3
Remaining parts	521	553	634	569	23,362	24·4	18·4	30·5
Brant	1,021	990	920	977	63,476	18·3	23·0	18·3
Brantford, c.	635	607	537	593	30,107	19·7	24·9	18·2
Remaining parts	386	383	383	384	23,369	16·4	20·5	18·4
Bruce	780	833	846	820	42,286	19·4	19·9	22·4
Carleton	3,392	3,439	3,428	3,420	170,040	20·1	26·7	17·3
Ottawa, c.	2,486	2,508	2,514	2,503	126,872	19·7	28·7	15·8
Eastview, t.	233	201	227	220	6,686	32·9	22·0	34·4
Remaining parts	673	730	687	697	36,482	19·1	20·6	21·3
Cochrane	1,677	1,790	1,820	1,762	58,033	30·4	20·9	33·5
Timmins, t.	496	489	491	492	14,200	34·6	24·8	32·1
Remaining parts	1,181	1,301	1,329	1,270	43,833	29·0	19·6	34·0
Dufferin	276	254	254	261	14,892	17·5	20·2	19·9
Dundas	284	295	272	284	16,098	17·6	19·6	20·7
Durham	471	436	409	439	25,782	17·0	19·7	19·9
Elgin	662	663	656	660	43,436	16·2	20·5	17·0
St. Tbomas, c.	263	236	216	238	15,430	15·4	23·4	16·1
Remaining parts	399	427	440	422	28,006	15·1	19·0	18·2
Essex	4,068	3,584	3,126	3,593	159,780	22·6	25·1	20·6
East Windsor, c.	475	376	332	394	14,251	27·6	25·8	24·7
Windsor, c.	1,603	1,393	1,177	1,391	63,108	22·0	27·4	18·5
Sandwich, t.	310	277	199	262	10,715	24·5	26·7	21·1
Walkerville, t.	229	185	165	193	10,105	19·1	27·7	16·8
Remaining parts	1,451	1,353	1,253	1,352	61,601	21·9	21·8	23·1
Frontenac	878	886	938	901	45,756	19·7	22·4	20·2
Kingston, c.	467	469	479	472	23,439	20·1	25·4	18·2
Remaining parts	411	417	459	429	22,317	19·2	19·2	23·0
Glengarry	392	421	421	411	18,666	22·0	18·5	27·4
Grenville	278	267	276	274	16,327	16·8	20·3	19·0

[6] Exclusive of New Quebec from which no vital statistics returns were received for the years 1930-32.
[7] Not including Compton township.

TABLE 14. Live births in Canada by residence of mother, and birth rates (crude, expected and standardized) for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, 1930-1932—Con.

County or Census Division and City, Town, etc.	No. of Births by Residence of Mother				Population, 1931	Birth Rates per 1,000 Population		
	1930	1931	1932	Average, 1930-32		Crude	Expected	Standardized
Ontario—Con.								
Grey	1,095	1,079	1,035	1,070	57,699	18·5	20·8	20·5
Owen Sound, c.	247	253	237	246	12,839	19·2	24·0	18·4
Remaining parts	848	826	798	824	44,860	18·4	19·9	21·3
Haldimand	390	395	374	386	21,428	18·0	20·6	20·1
Haliburton	152	146	167	155	5,997	25·8	19·5	30·5
Halton	432	415	419	422	26,568	15·9	22·4	16·3
Hastings	1,310	1,367	1,275	1,317	58,846	22·4	20·9	24·6
Belleville, c.	255	280	259	265	13,790	19·2	25·2	17·6
Trenton, t.	162	136	160	153	6,276	24·4	22·0	25·5
Remaining parts	893	951	856	900	38,780	23·2	19·3	27·7
Huron	802	728	683	738	45,180	16·3	19·4	19·4
Kenora	471	483	456	470	21,946	21·4	21·1	23·3
Kenora, t.	135	148	130	138	6,766	20·4	24·1	19·5
Remaining parts	336	335	326	332	15,180	21·9	19·8	25·4
Kent	1,338	1,289	1,268	1,298	62,865	20·6	21·8	21·8
Chatham, c.	356	285	287	309	14,569	21·2	25·3	19·3
Remaining parts	982	1,004	981	989	48,296	20·5	20·8	22·6
Lambton	1,024	1,076	940	1,013	54,674	18·5	21·0	20·3
Sarnia, c.	398	406	348	384	18,191	21·1	24·4	19·9
Remaining parts	626	670	592	629	36,483	17·2	19·3	20·5
Lanark	660	624	610	631	32,856	19·2	21·3	20·8
Smith's Falls, t.	151	120	103	125	7,108	17·6	22·9	17·6
Remaining parts	509	504	507	507	25,748	19·7	20·8	21·7
Leeds	693	614	648	652	36,167	18·5	21·2	20·1
Brockville, t.	205	197	170	191	9,736	19·6	24·8	18·2
Remaining parts	488	417	478	461	25,421	18·1	19·8	21·0
Lennox	222	209	190	207	12,004	17·2	19·6	20·2
Lincoln	1,037	991	931	986	54,199	18·2	23·6	17·7
St. Catharines, c.	545	535	467	516	24,753	20·8	26·1	18·4
Remaining parts	492	456	464	471	29,446	16·0	21·6	17·0
Manitoulin	237	282	263	261	10,734	24·3	21·1	26·6
Middlesex	1,907	1,906	1,898	1,904	118,241	16·1	24·0	15·4
London, c.	1,187	1,172	1,151	1,170	71,148	16·4	26·9	14·0
Remaining parts	720	734	747	734	47,093	15·6	19·6	18·3
Muskoka	457	416	450	441	20,985	21·0	21·5	22·5
Nipissing	1,195	1,209	1,175	1,193	41,207	29·0	20·4	32·6
North Bay, c.	380	378	361	373	15,628	24·0	23·2	23·8
Remaining parts	815	831	814	820	25,679	31·9	18·7	39·2
Norfolk	627	615	654	632	31,359	20·2	21·2	21·8
Simcoe, t.	104	90	115	103	5,226	19·7	26·6	17·0
Remaining parts	523	625	539	529	26,133	20·2	20·2	23·1
Northumberland	555	651	557	554	31,452	17·6	19·9	20·3
Cobourg, t.	119	112	108	113	5,834	19·4	23·7	18·8
Remaining parts	436	439	449	441	25,618	17·2	19·0	20·8
Ontario	1,277	1,156	1,049	1,161	59,667	19·5	23·1	19·4
Oshawa, c.	663	677	470	570	23,439	24·3	27·3	20·5
Whitby, t.	55	47	58	53	5,046	10·5	22·8	10·6
Remaining parts	559	632	521	537	31,182	17·2	20·0	19·8
Oxford	923	796	821	847	47,825	17·7	21·5	18·9
Woodstock, c.	206	175	174	185	11,395	16·2	25·3	14·8
Ingersoll, t.	106	70	92	89	5,233	17·0	22·2	17·6
Remaining parts	611	551	555	572	31,197	18·3	20·0	21·1
Parry Sound	609	628	691	643	25,900	24·8	19·4	29·5
Peel	476	495	483	485	28,156	17·2	21·5	18·4
Brampton, t.	107	96	89	97	5,532	17·5	24·2	16·6
Remaining parts	369	399	394	387	22,624	17·1	20·8	18·9
Perth	907	928	841	892	51,392	17·4	20·9	19·1
Stratford, c.	350	336	281	322	17,742	18·1	23·8	17·5
Remaining parts	557	592	560	570	33,650	16·9	19·3	20·2
Peterborough	901	861	864	875	43,958	19·9	22·3	20·6
Peterborough, c.	476	458	452	462	22,327	20·7	24·9	19·1
Remaining parts	425	403	412	413	21,631	19·1	19·6	22·4
Prescott	695	686	648	676	24,596	27·5	19·6	32·2
Hawkesbury, t.	180	168	152	163	5,177	31·5	21·1	34·4
Remaining parts	516	528	496	513	19,419	26·4	19·3	31·5
Prince Edward	319	311	299	310	16,693	18·6	19·6	21·8
Rainy River	382	388	390	387	17,359	22·3	20·3	25·2
Fort Frances, t.	161	138	122	140	5,470	25·6	24·3	24·2
Remaining parts	221	250	268	246	11,889	20·7	18·5	25·7
Renfrew	1,276	1,169	1,192	1,209	52,227	23·1	21·0	25·3
Pembroke, t.	247	225	254	242	9,368	25·8	25·9	22·9
Renfrew, t.	103	125	116	115	6,296	21·7	24·2	20·7
Remaining parts	925	809	822	852	37,663	22·7	19·4	26·9
Russell	519	632	542	531	18,487	28·7	18·6	35·5
Simcoe	1,534	1,519	1,502	1,518	83,667	18·1	20·6	20·2
Barrie, t.	153	139	131	141	7,776	18·1	23·1	18·0
Collingwood, t.	109	95	98	101	5,809	17·4	20·7	19·4
Midland, t.	146	170	123	146	6,920	21·1	23·3	20·8
Orillia, t.	170	156	176	167	8,183	20·4	24·4	19·2
Remaining parts	956	959	974	963	54,979	17·5	19·4	20·8
Stormont	840	849	815	835	32,524	25·7	22·0	26·8
Cornwall, t.	386	354	341	360	11,126	32·4	24·4	30·4
Remaining parts	454	495	474	474	21,398	22·2	20·7	24·6

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County or Census Division and City, Town, etc.	No. of Births by Residence of Mother				Population, 1931	Birth Rates per 1,000 Population		
	1930	1931	1932	Average, 1930-32		Crude	Expected	Standardized
Ontario—Con.								
Sudbury	1,767	1,841	1,818	1,809	58,251	31·1	21·0	34·0
Sudbury, c.	635	748	673	685	18,518	37·0	25·1	33·9
Remaining parts	1,132	1,093	1,145	1,123	39,733	28·3	19·1	34·0
Thunder Bay	1,385	1,357	1,348	1,363	65,118	20·9	22·6	21·3
Fort William, c.	553	585	537	558	26,277	21·2	23·7	20·6
Port Arthur, c.	431	361	403	398	19,818	20·1	24·9	18·6
Remaining parts	401	411	408	407	19,023	21·4	18·7	26·4
Timiskaming	921	969	1,078	989	37,043	26·7	20·9	29·4
Victoria	462	425	442	443	25,844	17·1	20·1	19·6
Lindsay, t.	156	134	126	139	7,505	18·6	23·2	18·4
Remaining parts	306	291	316	304	18,339	16·6	18·9	20·1
Waterloo	1,882	1,888	1,708	1,826	89,852	20·3	25·0	18·7
Galt, c.	242	251	236	243	14,006	17·3	25·4	15·7
Kitchener, c.	723	719	608	683	30,793	22·2	28·6	17·8
Preston, t.	118	112	112	114	6,280	18·2	24·8	16·8
Waterloo, t.	165	168	144	159	8,095	19·6	26·8	16·8
Remaining parts	634	638	608	627	30,678	20·4	20·8	22·6
Welland	1,756	1,722	1,561	1,680	82,731	20·3	23·8	19·7
Niagara Falls, c.	423	437	384	415	19,046	21·8	26·6	18·8
Welland, c.	250	244	221	238	10,709	22·2	26·0	19·7
Fort Erie, t.	108	104	95	102	5,904	17·3	25·4	15·6
Port Colborne, t.	215	192	150	186	6,503	28·6	24·8	26·6
Thorold, t.	117	90	90	99	5,092	19·4	22·2	20·1
Remaining parts	643	655	621	640	35,477	18·0	21·3	19·5
Wellington	1,162	1,121	1,051	1,111	58,164	19·1	22·2	19·8
Guelph, c.	481	430	419	443	21,075	21·0	26·3	18·4
Remaining parts	681	691	632	668	37,089	18·0	19·8	20·9
Wentworth	3,748	3,662	3,361	3,590	190,019	18·9	25·8	16·8
Hamilton, c.	3,204	3,139	2,884	3,076	155,547	19·8	26·5	17·1
Dundas, t.	97	87	78	87	5,026	17·3	23·7	16·8
Remaining parts	447	436	399	427	29,446	14·6	22·2	15·0
York	17,234	16,174	15,469	16,292	856,955	19·0	28·2	15·5
Toronto, c.	12,446	11,421	10,954	11,607	631,207	18·4	29·1	14·5
Mimico, t.	146	164	122	144	6,800	21·2	25·9	18·8
New Toronto, t.	187	162	167	172	7,146	24·1	26·7	20·7
Remaining parts	4,455	4,427	4,226	4,369	211,802	20·6	25·8	18·4
Manitoba	**14,257**	**14,278**	**14,028**	**14,188**	**700,139**	**20·3**	**23·1**	**20·2**
Division No. 1	704	755	749	736	22,817	32·3	18·7	39·7
Division No. 2	1,141	1,116	1,177	1,145	38,810	29·5	21·3	31·9
Division No. 3	622	584	554	587	26,753	21·9	21·2	23·8
Division No. 4	367	334	361	354	18,253	19·4	21·6	20·6
Division No. 5	989	974	945	969	46,228	21·0	20·2	23·9
Transcona, t.	107	109	101	106	5,747	18·4	23·3	18·2
Remaining parts	882	865	844	864	40,481	21·3	19·7	24·9
Division No. 6	5,098	5,023	4,776	4,966	283,828	17·5	27·3	14·7
Portage la Prairie, c.	115	135	103	118	6,597	17·9	23·2	17·7
St. Boniface, c.	348	350	306	335	16,305	20·5	26·9	17·5
Winnipeg, c.	3,680	3,618	3,361	3,653	218,785	16·2	28·6	13·1
Remaining parts	955	920	1,006	960	42,141	22·8	21·8	24·0
Division No. 7	639	649	692	627	36,912	17·0	22·4	17·6
Brandon, c.	304	300	244	283	17,082	16·6	24·7	15·4
Remaining parts	335	349	348	344	19,830	17·3	20·4	19·5
Division No. 8	361	361	332	351	19,846	17·7	20·4	19·9
Division No. 9	815	761	768	781	45,414	17·2	21·1	18·7
Division No. 10	362	384	367	371	17,916	20·7	19·3	24·7
Division No. 11	585	544	600	576	28,100	20·5	20·1	23·4
Division No. 12	656	614	577	582	24,344	23·9	17·4	31·6
Division No. 13	527	666	572	555	24,263	22·9	19·5	26·9
Division No. 14	613	593	575	594	25,978	22·9	19·4	27·0
Division No. 15	254	232	243	243	10,008	24·3	20·0	27·9
Division No. 16	624	788	840	751	30,669	24·5	18·7	30·1
Saskatchewan	**22,215**	**21,442**	**20,912**	**21,523**	**921,785**	**23·3**	**21·0**	**25·5**
Division No. 1	905	921	837	888	41,544	21·4	20·3	24·2
Division No. 2	994	954	856	935	42,831	21·8	20·4	24·6
Weyburn, c.	77	95	72	81	5,002	16·2	25·4	14·7
Remaining parts	917	859	784	853	37,829	22·5	19·7	26·3
Division No. 3	1,171	1,068	1,032	1,090	46,881	23·3	19·9	26·9
Division No. 4	681	626	554	620	28,126	22·0	20·3	25·0
Division No. 5	1,294	1,167	1,219	1,227	53,948	22·7	20·3	25·7
Division No. 6	2,543	2,419	2,086	2,349	109,906	21·4	24·6	20·0
Regina, c.	1,353	1,237	1,023	1,204	53,209	22·6	29·2	17·8
Remaining parts	1,190	1,182	1,063	1,145	56,697	20·2	20·2	23·0
Division No. 7	1,380	1,293	1,217	1,297	63,230	20·5	21·3	22·2
Moose Jaw, c.	411	361	343	372	21,299	17·5	24·3	16·5
Remaining parts	969	932	874	925	41,931	22·1	19·7	25·7
Division No. 8	1,228	1,165	1,071	1,155	49,361	23·4	20·3	26·6
Swift Current, c.	132	107	87	109	5,296	20·6	23·4	20·2
Remaining parts	1,096	1,058	984	1,046	44,065	23·7	19·9	27·4
Division No. 9	1,473	1,431	1,504	1,469	60,639	24·3	20·0	27·8
Yorkton, c.	123	105	111	113	5,027	22·5	24·7	20·9
Remaining parts	1,350	1,326	1,393	1,356	55,612	24·4	19·6	28·6

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County or Census Division and City, Town, etc.	No. of Births by Residence of Mother				Population, 1931	Birth Rates per 1,000 Population		
	1930	1931	1932	Average, 1930-32		Crude	Expected	Standardized
Saskatchewan—Con.								
Division No. 10	1,071	995	1,028	1,031	41,890	24·6	19·0	29·9
Division No. 11	1,973	1,744	1,616	1,778	87,976	20·2	23·8	19·5
Saskatoon, c	957	887	789	878	43,291	20·3	28·1	16·6
Remaining parts	1,016	857	827	900	44,685	20·1	19·7	23·5
Division No. 12	869	902	787	853	40,612	21·0	20·3	23·8
Division No. 13	1,120	1,050	1,036	1,069	42,632	25·1	19·8	29·2
Division No. 14	1,092	1,256	1,363	1,237	46,222	26·8	19·4	31·7
Division No. 15	2,345	2,305	2,381	2,344	83,697	28·0	20·5	31·4
Prince Albert, c	232	217	227	225	9,905	22·7	25·6	20·4
Remaining parts	2,113	2,088	2,154	2,118	73,792	28·7	19·8	33·3
Division No. 16	1,234	1,177	1,285	1,232	48,736	25·3	19·7	29·5
North Battleford, c	147	121	114	127	5,986	21·2	24·7	19·7
Remaining parts	1,087	1,056	1,171	1,105	42,750	25·8	19·0	31·2
Division No. 17	673	752	784	736	27,315	26·9	19·4	31·9
Division No. 18	169	217	256	214	6,339	33·8	21·5	36·2
Alberta	**17,632**	**17,197**	**16,966**	**17,265**	**731,605**	**23·6**	**21·8**	**24·9**
Division No. 1	717	696	641	685	28,849	23·7	21·2	25·7
Medicine Hnt, c	209	172	179	187	10,300	18·2	23·6	17·7
Remaining parts	508	524	462	498	18,549	26·8	19·9	30·9
Division No. 2	1,420	1,353	1,331	1,368	57,186	23·9	21·8	25·2
Lethbridge, c	328	317	276	307	13,489	22·8	25·4	20·6
Remaining parts	1,092	1,036	1,055	1,061	43,697	24·3	20·7	26·9
Division No. 3	354	329	334	339	15,066	22·5	19·6	26·4
Division No. 4	712	570	530	604	29,067	20·8	21·4	22·3
Division No. 5	584	539	459	527	26,651	19·8	19·2	23·7
Division No. 6	3,040	2,780	2,670	2,830	140,624	20·1	24·5	18·9
Calgary, c	1,681	1,573	1,469	1,574	83,761	18·8	26·4	16·4
Remaining parts	1,359	1,207	1,201	1,256	56,863	22·1	21·6	23·5
Division No. 7	883	817	872	857	38,106	22·5	19·6	26·4
Division No. 8	1,374	1,296	1,271	1,314	61,016	21·5	21·3	23·3
Division No. 9	437	472	512	474	24,503	19·3	20·0	22·2
Division No. 10	1,655	1,536	1,464	1,552	58,049	26·7	20·5	30·0
Division No. 11	2,938	2,987	2,815	2,913	126,832	23·0	24·2	21·8
Edmonton, c	1,694	1,692	1,552	1,646	79,197	20·8	26·8	17·8
Remaining parts	1,244	1,295	1,263	1,267	47,635	26·6	19·9	30·7
Division No. 12	311	340	420	357	13,815	25·8	19·8	30·1
Division No. 13	804	872	830	835	24,936	33·5	19·0	40·4
Division No. 14	1,085	1,228	1,275	1,196	39,508	30·3	19·2	36·2
Division No. 15	385	409	503	432	13,664	31·6	19·8	36·8
Division No. 16	683	775	818	759	27,945	27·2	19·8	31·6
Division No. 17	250	198	221	223	5,788	38·5	19·5	45·4
British Columbia[8]	**10,851**	**10,431**	**10,226**	**10,503**	**694,263**	**15·1**	**21·7**	**16·1**
Division No. 1	490	444	411	448	22,566	19·9	19·9	22·9
Division No. 2	678	711	717	702	40,455	17·4	21·3	18·7
Nolson, c	102	130	105	112	5,992	18·7	23·2	18·5
Trail, c	209	205	239	218	7,573	28·8	24·4	27·1
Remaining parts	367	376	373	372	26,890	13·8	20·0	15·9
Division No. 3	717	724	740	727	40,523	17·9	20·1	20·5
Division No. 4	5,666	5,389	5,058	5,371	379,858	14·1	22·9	14·2
New Westminster, c	331	363	322	339	17,524	19·3	23·2	19·1
North Vancouver, c	148	116	134	133	8,510	15·6	21·9	16·4
Vancouver, c	3,631	3,368	3,096	3,365	246,593	13·6	24·4	12·9
Remaining parts	1,556	1,542	1,506	1,535	107,231	14·3	19·7	16·7
Division No. 5 A	1,627	1,451	1,471	1,516	114,338	13·3	20·9	14·6
Nanaimo, c	164	123	108	132	6,745	19·6	22·8	19·7
Victoria, c	518	494	460	491	39,082	12·6	22·3	12·9
Remaining parts	945	834	903	894	68,511	13·0	19·9	15·1
Division No. 5 B	112	92	120	108	6,595	16·4	18·7	20·2
Division No. 6 A	434	429	418	427	25,030	17·1	19·5	20·1
Kamloops, o	115	116	103	111	6,167	18·0	20·8	19·9
Remaining parts	319	313	315	316	18,863	16·8	19·1	20·2
Division No. 6 B	102	103	114	106	4,995	21·2	19·2	25·4
Division No. 7	209	215	236	220	12,658	17·4	20·9	19·1
Division No. 8 A	211	218	248	226	11,626	19·4	17·2	26·0
Division No. 8 B	158	174	214	182	9,908	18·4	19·2	22·0
Division No. 9 A	7	6	4	6[9]	718	7·9	13·9	13·1
Division No. 9 B	16	17	20	18[9]	638	27·7	17·2	37·0
Division No. 9 C	268	284	232	261	15,676	16·6	18·6	20·5
Prince Rupert, c	114	120	83	106	6,350	16·7	21·3	18·0
Remaining parts	154	164	149	156	9,326	16·7	16·7	23·0
Division No. 9 D	32	56	45	44	1,666	26·4	17·4	34·9
Division No. 10 A	–	–	1	[9]	100	3·0	10·0	6·9
Division No. 10 B	5	2	1	3[9]	228	11·8	13·2	20·7
Division No. 10 C	119	116	176	137	6,685	20·5	17·4	27·2

[8] Divisions in British Columbia are census divisions, and the correspondence of their subdivisions with those in census publications is as follows:—5 A=5 a, b, c, d; 5 B=5 c, f; 6 A=6 a, b, c; 6 B=6 d, e, f; 8 A=8 a, b, c, d; 8 B=8 e, f, g; 9 A=9 a; 9 B=9 b; 9 C=9 c, d, o; 9 D=9 f; 10 A=10 a; 10 B=10 b; 10 C=10 c, d.

[9] Crude rates worked on average births carried to one decimal place.

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932

No.	County or Census Division and City, Town, etc.	Births, 1930			
		By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother
	CANADA[1]	243,495	[1]	[1]	243,495
	Prince Edward Island	1,749	7	10	1,752
1	Kings	300	1	16	315
2	Prince	755	15	12	752
3	Queens	694	22	13	685
4	Charlottetown, c	336	100	5	241
5	Remaining parts	358	3	89	444
	Nova Scotia	11,346	40	27	11,333
6	Annapolis	321	8	11	324
7	Antigonish	201	41	4	164
8	Cape Breton	2,491	32	13	2,472
9	Sydney, c	615	61	12	566
10	Glace Bay, t	705	106	2	601
11	New Waterford, t	300	10	3	293
12	North Sydney, t	172	6	5	171
13	Sydney Mines, t	232	16	4	220
14	Remaining parts	467	4	158	621
15	Colchester	580	23	11	568
16	Truro, t	194	39	5	160
17	Remaining parts	386	11	33	408
18	Cumberland	812	16	16	812
19	Amherst, t	129	21	1	109
20	Springhill, t	229	39	3	193
21	Remaining parts	454	6	62	510
22	Digby	385	7	8	386
23	Guysborough	338	3	34	369
24	Halifax	2,315	82	24	2,257
25	Halifax, c	1,555	194	19	1,380
26	Dartmouth, t	167	11	38	194
27	Remaining parts	593	10	100	683
28	Hants	450	11	20	459
29	Inverness	360	3	15	372
30	Kings	488	9	17	496
31	Lunenburg	618	8	16	626
32	Pictou	764	15	18	767
33	New Glasgow, t	317	132	8	193
34	Stellarton, t	95	5	31	121
35	Remaining parts	352	10	111	453
36	Queens	215	3	13	225
37	Richmond	193	1	21	213
38	Shelburne	266	2	11	275
39	Victoria	113	-	13	126
40	Yarmouth	436	17	3	422
41	Yarmouth, t	184	51	2	135
42	Remaining parts	252	2	37	287
	New Brunswick	10,534	64	30	10,500
43	Albert	155	1	16	170
44	Carleton	420	15	10	415
45	Charlotte	466	9	12	469
46	Gloucester	1,543	6	10	1,547
47	Kent	689	5	14	698
48	Kings	327	2	26	351
49	Madawaska	943	4	9	948
50	Edmundston, t	279	6	7	280
51	Remaining parts	664	1	5	668
52	Northumberland	937	18	13	932
53	Queens	200	4	14	210
54	Restigouche	1,039	32	14	1,021
55	Campbellton, t	335	97	1	239
56	Remaining parts	704	3	81	782
57	St. John	1,346	109	17	1,254
58	Saint John, c	1,223	190	20	1,053
59	Remaining parts	123	11	89	201
60	Sunbury	142	2	12	152
61	Victoria	445	3	8	450

[1] No adjustments have been made for births in Canada to mothers resident in other countries or for births in other countries to mothers resident in Canada.

For footnotes 2-8, see those of corresponding number on pages 366, 367, 368 and 371.

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

Births, 1931				Births, 1932				No.
By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	
240,473	1	1	**240,473**	**235,666**	1	1	**235,666**	
1,879	8	8	**1,879**	**2,027**	6	7	**2,028**	
325	2	11	334	353	2	12	363	1
778	9	14	783	880	11	6	875	2
776	25	11	762	794	17	13	790	3
371	116	8	263	388	109	5	284	4
405	8	102	499	406	2	102	506	5
11,615	**38**	**37**	**11,614**	**11,629**	**23**	**24**	**11,630**	
291	3	10	298	328	7	8	329	6
213	40	9	182	219	56	5	168	7
2,493	21	20	2,492	2,417	29	8	2,396	8
643	61	10	592	601	67	7	541	9
693	79	2	616	724	121	7	610	10
316	11	2	307	270	17	9	262	11
176	10	4	170	149	11	9	147	12
244	11	11	244	243	16	3	230	13
421	1	143	563	430	6	182	606	14
575	19	16	572	580	22	15	573	15
194	41	9	162	213	42	5	176	16
381	7	36	410	367	8	38	397	17
792	16	17	793	828	19	18	827	18
144	24	3	123	150	28	6	128	19
228	45	1	184	217	45	-	172	20
420	6	72	486	461	8	74	527	21
428	2	6	432	411	4	9	416	22
334	2	42	374	335	2	51	384	23
2,445	82	23	2,386	2,440	59	30	2,411	24
1,651	243	21	1,429	1,620	227	28	1,421	25
158	14	53	197	148	10	55	193	26
636	8	132	760	672	9	134	797	27
478	7	18	489	498	13	13	498	28
403	1	13	415	417	3	19	433	29
475	5	14	484	488	8	19	499	30
579	14	7	572	596	12	15	599	31
780	20	13	773	758	24	23	757	32
359	194	3	168	353	183	1	171	33
76	9	60	127	78	6	62	134	34
345	6	139	478	327	8	133	452	35
250	1	13	262	223	-	7	230	36
232	-	10	242	228	2	13	239	37
284	5	8	287	280	-	6	286	38
120	1	7	126	136	-	12	148	39
443	11	3	435	447	13	3	437	40
194	34	2	162	180	33	2	149	41
249	3	27	273	267	2	23	288	42
10,801	**74**	**29**	**10,756**	**10,810**	**53**	**17**	**10,774**	
152	3	20	169	150	7	17	160	43
443	12	9	440	434	12	7	429	44
426	19	7	414	428	8	11	431	45
1,558	15	16	1,559	1,616	9	4	1,611	46
712	6	23	729	741	2	15	754	47
358	10	30	378	323	1	35	357	48
893	3	6	896	935	2	2	935	49
272	10	7	269	239	2	6	243	50
621	5	11	627	696	4	-	692	51
945	9	12	948	896	13	7	890	52
227	4	9	232	199	2	17	214	53
1,149	32	25	1,142	1,052	24	16	1,044	54
291	102	8	197	254	72	5	187	55
858	2	89	945	798	2	61	857	56
1,357	103	18	1,272	1,428	92	11	1,347	57
1,215	184	18	1,049	1,296	216	14	1,094	58
142	6	87	223	132	9	130	253	59
154	1	20	173	177	1	13	189	60
427	1	8	434	422	4	3	421	61

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

No.	County or Census Division and City, Town, etc.	Births, 1930			
		By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother
	New Brunswick—Con.				
1	Westmorland	1,214	31	31	1,214
2	Moncton, c.	525	67	18	476
3	Remaining parts	689	8	57	738
4	York	668	25	26	669
5	Fredericton, c.	205	40	5	170
6	Remaining parts	463	3	39	499
	Quebec	83,625	58	359	83,926
7	Abitibi	905	9	11	907
8	Argenteuil	398	5	11	404
9	Arthabaska	850	2	10	858
10	Victoriaville, t.	214	-	4	218
11	Remaining parts	636	2	6	640
12	Bagot	495	2	4	497
13	Beauce	1,631	4	8	1,635
14	Beauharnois	534	6	9	537
15	Valleyfield, c.	340	5	3	338
16	Remaining parts	194	1	6	199
17	Bellechasse	713	-	6	719
18	Berthier	528	4	3	527
19	Bonaventure	1,072	2	19	1,089
20	Brome	198	12	8	194
21	Chambly	490	6	28	512
22	Longueuil, c.	137	4	6	139
23	St-Lambert, c.	74	8	24	90
24	Remaining parts	279	6	10	283
25	Champlain	2,065	13	19	2,071
26	Cap-de-la-Madeleine, c.	357	1	3	359
27	Grand'Mère, c.	221	1	1	221
28	La Tuque, t.	312	9	2	305
29	Remaining parts	1,175	8	19	1,186
30	Charlevoix	831	2	6	835
31	Châteauguay	289	2	16	303
32	Chicoutimi	2,595	1	7	2,601
33	Chicoutimi, c.	498	4	4	498
34	Jonquière, t.	499	7	4	496
35	Remaining parts	1,598	5	14	1,607
36	Compton[3]	523	3	17	537
37	Deux-Montagnes	371	-	6	377
38	Dorchester	1,028	3	3	1,028
39	Drummond	776	5	10	781
40	Drummondville, t.	314	8	13	319
41	Remaining parts	462	10	10	462
42	Frontenac	961	2	8	967
43	Gaspé	1,405	3	3	1,405
44	Hull	1,984	16	135	2,103
45	Hull, c.	1,019	12	58	1,065
46	Remaining parts	965	9	82	1,038
47	Huntingdon	267	1	8	274
48	Iberville	233	2	8	239
49	Iles-de-la-Madeleine[4]	279	3	-	276
50	Joliette	861	10	5	856
51	Joliette, c.	332	7	4	329
52	Remaining parts	529	6	4	527
53	Kamouraska	786	1	5	790
54	Labelle	702	3	8	707
55	Lac-St-Jean	2,206	-	8	2,214
56	Laprairie	360	6	3	357
57	L'Assomptoa	425	2	1	424
58	Lévis	1,007	5	10	1,012
59	Lévis, c.	309	15	4	298
60	Lauzon, t.	197	3	2	196
61	Remaining parts	501	1	18	518
62	L'Islet	645	4	2	643
63	Lotbinière	748	3	1	746
64	Maskinongé	512	4	1	509
65	Matane	1,970	6	16	1,980
66	Mégantic	1,281	9	10	1,282
67	Thetford Mines, c.	531	4	9	530
68	Remaining parts	750	8	4	746
69	Missisquoi	456	10	12	458
70	Montcalm	396	5	4	395
71	Montmagay	628	5	6	620

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

Births, 1931				Births, 1932				No.
By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	
1,295	40	22	1,277	1,284	24	20	1,280	1
557	79	14	492	511	68	11	454	2
738	14	61	785	773	7	60	826	3
705	28	16	693	725	36	23	712	4
192	51	6	147	199	52	8	155	5
513	13	46	546	526	8	39	557	6
83,606	50	303	83,859	82,210	42	250	82,424	
909	14	12	907	967	8	16	975	7
398	2	8	404	409	5	23	427	8
855	2	1	854	895	1	3	897	9
220	-	1	221	213	-	5	218	10
635	2	-	633	682	6	3	679	11
491	2	4	493	549	1	4	552	12
1,678	5	7	1,680	1,670	4	8	1,674	13
647	3	21	665	661	4	14	671	14
352	5	3	350	387	5	3	385	15
295	2	22	315	274	3	15	286	16
774	3	4	775	731	-	4	735	17
551	1	4	554	520	3	4	521	18
1,046	4	26	1,068	1,128	5	18	1,141	19
201	7	11	205	230	14	8	224	20
455	2	42	495	456	6	43	493	21
136	8	12	140	106	9	22	119	22
71	7	20	84	61	7	11	65	23
248	-	23	271	289	5	25	309	24
2,120	2	29	2,147	2,025	7	16	2,034	25
346	3	4	347	293	3	3	293	26
218	2	3	219	211	2	3	212	27
347	6	6	347	283	1	2	284	28
1,209	-	25	1,234	1,238	5	12	1,245	29
797	1	2	798	833	5	2	830	30
302	-	8	310	297	1	4	300	31
2,353	3	7	2,357	2,416	2	4	2,418	32
490	5	8	493	558	3	5	560	33
438	29	4	413	416	5	3	414	34
1,425	6	32	1,451	1,442	7	9	1,444	35
533	-	22	555	505	2	24	527	36
369	-	10	379	371	2	5	374	37
1,030	5	6	1,031	1,021	2	3	1,022	38
842	3	6	845	919	3	10	926	39
290	2	7	295	344	4	9	349	40
552	4	2	550	575	1	3	577	41
1,009	1	6	1,014	920	-	5	925	42
1,450	2	3	1,451	1,437	2	3	1,438	43
1,970	25	116	2,061	1,863	11	96	1,948	44
985	20	44	1,009	874	15	35	894	45
985	13	80	1,052	989	8	73	1,054	46
262	3	7	266	243	2	4	245	47
244	2	6	248	212	1	5	216	48
302	2	-	300	336	1	-	335	49
879	4	5	880	892	6	2	888	50
343	4	5	344	352	7	1	346	51
536	1	1	536	540	2	4	542	52
786	1	1	786	756	2	1	755	53
750	1	3	752	791	1	9	799	54
2,237	1	4	2,240	2,336	1	8	2,343	55
348	3	4	349	346	-	3	349	56
484	4	1	481	434	3	5	436	57
983	2	5	986	956	7	17	966	58
285	9	6	282	283	19	11	275	59
225	6	2	221	180	7	9	182	60
473	1	11	483	493	1	17	509	61
620	2	4	622	645	-	3	648	62
728	-	6	734	805	4	5	806	63
482	-	1	483	547	1	2	548	64
1,849	3	8	1,854	1,791	1	9	1,799	65
1,164	4	7	1,167	1,196	10	2	1,188	66
418	-	3	421	376	5	-	371	67
746	5	5	746	820	5	2	817	68
434	6	19	447	455	3	8	460	69
408	1	3	410	411	2	4	413	70
658	-	3	661	643	1	9	651	71

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

No.	County or Census Division and City, Town, etc.	Births, 1930			
		By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother
	Quebec—Con.				
1	Montmorency	569	-	8	577
2	Montreal and Jesus Islands[5]	24,221	161	158	24,218
3	Lachine, c	418	25	6	399
4	Montreal, c	20,953	662	355	20,646
5	Outremont, c	140	1	121	260
6	Verdun, c	1,128	6	341	1,463
7	Westmount, c	390	286	95	199
8	St-Laurent, t	139	-	10	149
9	Remaining parts	1,053	9	58	1,102
10	Napierville	208	-	2	210
11	Nicolet	858	3	2	857
12	Papineau	859	8	25	876
13	Pontiac	512	5	44	551
14	Portneuf	1,206	5	17	1,218
15	Quebec	5,440	95	9	5,354
16	Quebec, c	4,454	112	6	4,348
17	Remaining parts	986	7	27	1,006
18	Richelieu	583	4	5	585
19	Sorel, c	303	3	6	306
20	Remaining parts	280	5	4	279
21	Richmond	770	9	13	774
22	Rimouski	1,024	5	3	1,022
23	Rimouski, t	249	3	-	246
24	Remaining parts	775	3	4	776
25	Rouville	321	4	7	324
26	Saguenay[6]	745	2	5	748
27	Shefford	829	3	18	844
28	Granby, c	338	-	3	341
29	Remaining parts	491	4	16	503
30	Sherbrooke[7]	994	51	11	954
31	Sherbrooke, c	832	67	10	775
32	Remaining parts[7]	162	5	22	179
33	Soulanges	239	-	3	242
34	Stanstead	646	6	12	652
35	Magog, t	222	3	3	222
36	Remaining parts	424	15	21	430
37	St-Hyacinthe	656	6	6	656
38	St-Hyacinthe, c	376	7	2	371
39	Remaining parts	280	-	5	285
40	St-Jean	478	16	9	471
41	St-Jean, c	326	19	5	312
42	Remaining parts	152	2	9	159
43	St-Maurice	2,604	13	15	2,606
44	Shawinigan Falls, c	653	3	2	652
45	Trois-Rivières, c	1,350	9	14	1,355
46	Remaining parts	501	2	-	599
47	Temiskaming	730	5	30	755
48	Témiscouata	1,809	2	5	1,812
49	Rivière-du-Loup, c	238	5	4	237
50	Remaining parts	1,571	-	4	1,575
51	Terrebonne	1,208	5	16	1,219
52	St-Jérôme, t	352	1	5	356
53	Remaining parts	856	5	12	863
54	Vaudreuil	256	1	12	267
55	Verchères	352	1	1	352
56	Wolfe	588	7	12	593
57	Yamaska	516	5	-	511
	Ontario	71,263	382	148	71,029
58	Addington	129	7	37	159
59	Algoma	1,079	11	45	1,113
60	Sault Ste. Marie, c	642	59	9	592
61	Remaining parts	437	8	92	521
62	Brant	1,052	47	16	1,021
63	Brantford, c	732	108	11	635
64	Remaining parts	320	25	91	386
65	Bruce	760	26	46	780
66	Carleton	3,593	355	54	3,392
67	Ottawa, c	3,028	580	38	2,486
68	Eastview, t	212	3	24	233
69	Remaining parts	453	8	228	673

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

Births, 1931				Births, 1932				No.
By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	
568	–	8	566	543	4	6	545	1
23,874	193	110	23,791	22,941	207	111	22,845	2
486	34	9	461	409	28	12	393	3
20,482	710	296	20,068	19,651	770	310	19,191	4
113	–	98	211	130	1	122	251	5
1,179	5	378	1,552	1,183	11	334	1,506	6
361	287	82	156	333	265	97	165	7
137	1	10	146	127	–	11	138	8
1,116	9	90	1,197	1,108	11	104	1,201	9
218	1	3	220	182	–	3	185	10
894	2	2	894	866	3	5	868	11
900	8	29	921	888	10	18	896	12
503	2	30	531	530	6	32	556	13
1,146	2	14	1,158	1,131	3	19	1,147	14
5,602	71	20	5,551	5,347	78	11	5,280	15
4,462	97	20	4,385	4,290	105	9	4,194	16
1,140	3	29	1,166	1,057	6	35	1,086	17
629	2	2	629	573	2	1	572	18
315	1	2	316	279	1	1	279	19
314	2	1	313	294	1	–	293	20
800	6	16	809	693	–	16	709	21
1,206	4	2	1,204	1,272	5	2	1,269	22
241	1	1	241	240	3	–	237	23
965	3	1	963	1,032	4	4	1,032	24
349	3	5	351	346	2	6	350	25
722	4	1	719	771	–	3	774	26
880	4	18	894	837	7	26	856	27
388	4	5	389	378	4	8	382	28
492	3	16	505	459	4	19	474	29
999	66	6	939	957	72	5	890	30
799	76	5	728	769	76	5	698	31
200	6	17	211	188	7	11	192	32
226	4	2	224	217	–	6	223	33
631	6	18	643	594	3	21	612	34
202	1	1	202	236	–	6	242	35
429	6	18	441	358	4	16	370	36
632	10	2	624	626	11	4	619	37
371	11	2	362	363	10	3	356	38
261	–	1	262	263	2	2	263	39
462	13	8	457	448	9	5	444	40
316	13	6	309	310	16	2	296	41
146	2	4	148	138	–	10	148	42
2,464	12	7	2,459	2,369	12	6	2,363	43
625	6	–	620	624	2	2	624	44
1,327	11	8	1,324	1,232	10	4	1,226	45
612	1	4	515	513	1	1	513	46
799	5	20	814	840	5	18	853	47
1,830	6	6	1,836	1,770	1	7	1,776	48
240	5	2	237	234	3	–	231	49
1,596	3	6	1,599	1,536	1	10	1,545	50
1,164	5	14	1,173	1,158	8	21	1,171	51
318	–	2	320	286	1	7	292	52
846	5	12	853	872	7	14	879	53
279	2	11	288	271	1	6	276	54
340	–	8	348	355	–	7	362	55
560	2	6	664	570	1	12	581	56
535	–	3	538	603	–	2	505	57
69,209	**310**	**118**	**69,017**	**66,842**	**251**	**87**	**66,678**	
147	11	32	168	135	7	17	145	58
1,100	12	41	1,129	1,181	13	33	1,201	69
635	73	14	576	648	87	6	567	60
465	9	97	553	533	10	111	634	61
1,014	53	29	990	970	69	19	920	62
686	100	21	607	641	120	16	537	63
328	28	83	383	329	39	93	383	64
780	19	72	833	801	18	63	846	65
3,707	317	49	3,439	3,679	280	29	3,428	66
3,047	572	33	2,508	3,027	538	25	2,514	67
174	3	30	201	189	4	42	227	68
486	12	256	730	463	14	238	687	69

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

No.	County or Census Division and City, Town, etc.	Births, 1930			
		By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother
	Ontario—Con.				
1	Cochrane	1,654	12	35	1,677
2	Timmins, t.	506	24	14	496
3	Remaining parts	1,148	13	46	1,181
4	Dufferin	279	26	23	276
5	Dundas	288	16	12	284
6	Durham	456	15	30	471
7	Elgin	643	18	37	662
8	St. Thomas, c.	322	71	12	263
9	Remaining parts	321	8	86	399
10	Essex	4,038	32	62	4,068
11	East Windsor, c.	372	5	108	475
12	Windsor, c.	1,510	242	335	1,603
13	Sandwich, t.	196	2	116	310
14	Walkerville, t.	661	464	32	229
15	Remaining parts	1,299	26	178	1,451
16	Frontenac	974	126	30	878
17	Kingston, c.	659	206	14	467
18	Remaining parts	315	3	99	411
19	Glengarry	335	10	67	892
20	Grenville	241	6	43	278
21	Grey	1,074	37	58	1,095
22	Owen Sound, c.	313	77	11	247
23	Remaining parts	761	27	114	848
24	Haldimand	352	8	46	890
25	Haliburton	147	2	7	152
26	Halton	336	12	108	432
27	Hastings	1,310	51	51	1,310
28	Belleville, c.	395	152	12	255
29	Trenton, t.	142	5	25	162
30	Remaining parts	773	16	136	893
31	Huron	805	34	31	802
32	Kenora	461	20	30	471
33	Kenora, t.	168	41	8	135
34	Remaining parts	293	16	59	336
35	Kent	1,342	30	26	1,338
36	Chatham, c.	565	222	13	856
37	Remaining parts	777	13	218	982
38	Lambton	995	11	39	1,024
39	Sarnia, c.	450	67	15	398
40	Remaining parts	546	11	91	626
41	Lanark	683	47	24	660
42	Smith's Falls, t.	185	41	7	151
43	Remaining parts	498	23	34	509
44	Leeds	681	42	54	693
45	Brockville, t.	270	74	9	205
46	Remaining parts	411	13	90	488
47	Lennox	193	9	38	222
48	Lincoln	1,059	68	36	1,037
49	St. Catharines, c.	671	140	14	545
50	Remaining parts	398	13	107	492
51	Manitoulin	233	3	7	237
52	Middlesex	2,010	154	51	1,907
53	London, c.	1,481	329	35	1,187
54	Remaining parts	529	21	212	720
55	Muskoka	432	20	45	457
56	Nipissing	1,182	38	51	1,195
57	North Bay, c.	417	50	13	380
58	Remaining parts	755	20	70	815
59	Norfolk	627	23	23	627
60	Simcoe, t.	223	124	5	104
61	Remaining parts	404	10	129	523
62	Northumberland	533	21	43	555
63	Cobourg, t.	148	34	5	119
64	Remaining parts	385	13	64	436
65	Ontario	1,238	42	81	1,277
65	Oshawa, c.	686	72	49	663
67	Whitby, t.	45	8	18	55
68	Remaining parts	507	27	79	559
69	Oxford	905	44	62	923
70	Woodstock, c.	272	81	15	206
71	Ingersoll, t.	139	41	8	106
72	Remaining parts	494	33	150	611
73	Parry Sound	592	25	42	609
74	Peel	423	30	83	476
75	Brampton, t.	178	82	11	107
75	Remaining parts	245	5	129	369

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

Births, 1931				Births, 1932				No.
By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	
1,771	19	38	1,790	1,791	17	46	1,820	1
531	48	6	489	519	45	17	491	2
1,240	16	77	1,301	1,272	13	70	1,329	3
243	10	21	254	254	19	19	254	4
275	7	27	295	264	3	11	272	5
433	29	32	436	416	34	27	409	6
648	14	29	663	650	17	23	656	7
300	73	9	236	300	93	9	216	8
348	3	82	427	350	5	95	440	9
3,558	28	54	3,584	3,113	26	39	3,126	10
302	3	77	376	287	6	51	332	11
1,242	185	336	1,393	1,099	146	224	1,177	12
168	4	113	277	132	6	73	199	13
643	481	23	185	459	308	14	165	14
1,203	13	163	1,353	1,136	12	129	1,253	15
957	108	37	886	1,010	96	24	938	16
645	190	14	469	658	187	8	479	17
312	2	107	417	352	4	111	459	18
359	4	66	421	362	3	62	421	19
232	5	40	267	228	1	49	276	20
1,097	66	48	1,079	1,039	57	53	1,035	21
338	94	9	253	296	67	8	237	22
759	35	102	826	743	48	103	798	23
351	8	52	395	329	10	55	374	24
145	2	3	146	166	3	4	167	25
319	9	105	415	331	15	103	419	26
1,380	56	43	1,367	1,279	43	39	1,275	27
424	155	11	280	365	121	15	259	28
115	3	24	136	140	6	26	160	29
841	16	126	951	774	13	95	856	30
732	30	26	728	705	42	20	683	31
465	11	29	483	455	19	20	456	32
192	48	4	148	180	57	7	130	33
273	3	65	335	275	12	63	326	34
1,270	13	32	1,289	1,257	21	32	1,268	35
456	179	8	285	461	184	10	287	36
814	8	198	1,004	796	8	193	981	37
1,051	16	41	1,076	924	17	33	940	38
464	69	11	406	398	62	12	348	39
587	13	96	670	526	17	83	592	40
645	41	20	624	619	34	25	610	41
150	37	7	120	128	33	8	103	42
495	24	33	504	491	14	30	507	43
608	49	55	614	637	48	59	648	44
247	58	8	197	242	79	7	170	45
361	16	72	417	395	7	90	478	46
177	5	37	209	169	9	30	190	47
999	65	57	991	935	53	49	931	48
627	121	29	535	591	141	17	467	49
372	19	103	456	344	12	132	464	50
275	1	8	282	259	2	6	263	51
1,992	134	48	1,906	1,953	109	54	1,898	52
1,452	300	20	1,172	1,397	277	31	1,151	53
540	7	201	734	556	17	208	747	54
378	9	47	416	402	8	56	450	55
1,206	37	40	1,209	1,161	32	46	1,175	56
408	45	15	378	398	53	16	361	57
798	22	55	831	763	18	69	814	58
621	30	24	615	654	36	36	654	59
218	129	1	90	257	149	7	115	60
403	12	134	525	397	12	154	539	61
532	14	33	551	522	18	53	557	62
134	26	4	112	136	36	8	108	63
398	12	53	439	386	11	74	449	64
1,112	43	87	1,156	1,000	38	87	1,049	65
507	68	38	577	516	78	32	470	66
39	8	16	47	38	2	22	58	67
466	23	89	532	446	19	94	521	68
810	55	41	796	811	37	47	821	69
259	89	5	175	242	79	11	174	70
116	48	2	70	125	36	3	92	71
435	33	149	551	444	30	141	555	72
615	25	38	628	676	28	43	691	73
422	25	98	495	410	23	96	483	74
159	75	12	96	155	71	5	89	75
263	4	140	399	255	2	141	394	76

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

No.	County or Census Division and City, Town, etc.	Births, 1930			
		By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother
	Ontario—Con.				
1	Perth	904	35	38	907
2	Stratford, c	406	72	16	350
3	Remaining parts	498	19	78	557
4	Peterborough	894	27	34	901
5	Peterborough, c	639	172	9	476
6	Remaining parts	255	4	174	425
7	Prescott	710	27	12	695
8	Hawkesbury, t	190	16	6	180
9	Remaining parts	520	20	15	515
10	Prince Edward	304	12	27	319
11	Rainy River	307	2	17	382
12	Fort Frances, t	171	17	7	161
13	Remaining parts	196	5	30	221
14	Renfrew	1,275	50	50	1,275
15	Pembroke, t	328	91	10	247
16	Renfrew, t	142	45	6	103
17	Remaining parts	805	22	142	925
18	Russell	517	12	14	519
19	Simcoe	1,570	104	68	1,534
20	Barrie, t	201	57	9	153
21	Collingwood, t	144	39	4	109
22	Midland, t	181	44	9	146
23	Orillia, t	250	90	10	170
24	Remaining parts	794	31	193	956
25	Stormont	890	73	23	840
26	Cornwall, t	482	114	18	386
27	Remaining parts	408	9	55	454
28	Sudbury	1,752	45	60	1,767
29	Sudbury, c	720	110	25	635
30	Remaining parts	1,032	29	129	1,132
31	Thunder Bay	1,376	24	33	1,385
32	Fort William, c	623	98	28	553
33	Port Arthur, c	564	142	9	431
34	Remaining parts	189	1	213	401
35	Timiskaming	912	23	32	921
36	Victoria	462	24	24	462
37	Lindsay, t	208	58	6	156
38	Remaining parts	254	7	59	306
39	Waterloo	1,896	51	37	1,882
40	Galt, c	311	87	18	242
41	Kitchener, c	829	123	17	723
42	Preston, t	93	4	29	118
43	Waterloo, t	121	5	49	165
44	Remaining parts	542	13	105	634
45	Welland	1,688	29	97	1,756
46	Niagara Falls, c	438	44	29	423
47	Welland, c	298	60	12	250
48	Fort Erie, t	99	5	14	108
49	Port Colborne, t	197	7	25	215
50	Thorold, t	92	6	31	117
51	Remaining parts	564	18	97	643
52	Wellington	1,184	73	51	1,162
53	Guelph, c	409	74	146	481
54	Remaining parts	775	177	83	681
55	Wentworth	3,811	140	77	3,748
56	Hamilton, c	3,395	268	77	3,204
57	Dundas, t	85	12	24	97
58	Remaining parts	331	18	134	447
59	York	17,506	492	220	17,234
60	Toronto, c	13,559	1,821	708	12,446
61	Mimico, t	162	57	41	146
62	New Toronto, t	157	18	48	187
63	Remaining parts	3,628	552	1,379	4,455
	Manitoba	14,411	209	55	14,257
64	Division No. 1	620	9	93	704
65	Division No. 2	1,039	21	123	1,141
66	Division No. 3	572	2	52	622
67	Division No. 4	347	5	25	367
68	Division No. 5	678	19	330	989
69	Transcona, t	63	3	47	107
70	Remaining parts	615	17	284	882
71	Division No. 6	6,333	1,283	48	5,098
72	Portage la Prairie, c	196	91	10	115
73	St. Boniface, c	980	697	65	348

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

Births, 1931				Births, 1932				No.
By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	
925	38	41	928	836	25	30	841	1
392	68	12	336	330	56	7	281	2
533	21	80	592	506	15	69	560	3
861	28	28	861	862	23	25	864	4
612	175	21	458	592	161	21	452	5
249	6	160	403	270	7	149	412	6
701	21	6	686	658	21	11	648	7
173	15	-	158	164	14	2	152	8
528	12	12	528	494	11	13	496	9
299	12	24	311	287	7	19	299	10
382	6	12	388	382	2	10	390	11
151	20	7	138	146	26	2	122	12
231	4	23	250	236	3	35	268	13
1,164	42	37	1,159	1,196	45	41	1,192	14
272	57	10	225	313	65	6	254	15
174	54	5	125	162	51	5	116	16
718	21	112	809	721	15	116	822	17
519	10	23	532	520	3	25	542	18
1,575	118	62	1,519	1,559	106	49	1,502	19
186	58	11	139	207	83	7	131	20
125	38	8	95	127	31	2	98	21
224	61	7	170	177	59	5	123	22
228	84	12	156	268	98	6	176	23
812	30	177	959	780	20	214	974	24
907	74	16	849	862	60	13	815	25
460	118	12	354	452	121	10	341	26
447	11	59	495	410	1	65	474	27
1,822	39	58	1,841	1,796	37	59	1,818	28
830	116	34	748	796	142	19	673	29
992	16	117	1,093	1,000	16	161	1,145	30
1,357	24	24	1,357	1,351	22	19	1,348	31
657	95	23	585	593	85	29	537	32
504	151	8	361	534	140	9	403	33
196	3	218	411	224	6	190	408	34
957	18	30	969	1,086	33	25	1,078	35
418	14	21	425	450	23	15	442	36
180	51	5	134	201	82	7	126	37
238	2	55	291	249	3	70	316	38
1,906	42	24	1,888	1,719	48	37	1,708	39
321	79	9	251	309	89	16	236	40
851	143	11	719	729	134	13	608	41
95	8	25	112	77	3	38	112	42
110	1	59	168	90	-	54	144	43
529	4	113	638	514	8	102	608	44
1,671	28	79	1,722	1,512	20	69	1,561	45
463	51	25	437	402	35	17	384	46
303	72	13	244	275	62	8	221	47
106	12	10	104	109	17	3	95	48
178	8	22	192	134	1	17	150	49
75	9	24	90	72	6	24	90	50
546	11	120	655	520	10	111	621	51
1,136	60	45	1,121	1,073	63	41	1,051	52
363	74	141	430	366	69	122	419	53
773	155	73	691	707	148	73	632	54
3,708	124	78	3,662	3,444	143	60	3,361	55
3,320	245	64	3,139	3,111	273	46	2,884	56
83	15	19	87	60	11	29	78	57
305	9	140	436	273	5	131	399	58
16,475	493	192	16,174	15,702	431	198	15,469	59
12,677	1,850	594	11,421	12,095	1,714	573	10,954	60
164	61	61	164	145	58	35	122	61
129	17	50	162	104	6	69	167	62
3,505	454	1,376	4,427	3,358	450	1,318	4,226	63
14,370	**165**	**67**	**14,278**	**14,124**	**139**	**43**	**14,028**	
651	4	108	755	667	12	94	749	64
1,011	29	134	1,116	1,064	33	146	1,177	65
523	6	67	584	493	3	64	554	66
316	7	25	334	349	10	22	361	67
665	16	325	974	601	18	362	945	68
60	-	49	109	45	2	58	101	69
605	16	276	865	556	17	305	844	70
6,198	1,236	61	5,023	5,931	1,193	38	4,776	71
205	72	2	135	186	88	5	103	72
1,015	722	57	350	1,147	877	36	306	73

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

No.	County or Census Division and City, Town, etc.	Births, 1930			
		By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother
	Manitoba—Con.				
	Division No. 6—Con.				
1	Winnipeg, c.	4,629	1,345	396	3,680
2	Remaining parts	528	34	461	955
3	Division No. 7	631	55	63	639
4	Brandon, c.	374	86	16	304
5	Remaining parts	257	4	82	335
6	Division No. 8	335	24	50	361
7	Division No. 9	500	43	358	815
8	Division No. 10	357	28	33	362
9	Division No. 11	561	12	36	585
10	Division No. 12	479	8	85	556
11	Division No. 13	565	58	20	527
12	Division No. 14	585	14	42	613
13	Division No. 15	243	9	20	254
14	Division No. 16	566	9	67	624
	Saskatchewan	**22,051**	**93**	**257**	**22,215**
15	Division No. 1	888	39	56	905
16	Division No. 2	937	44	101	994
17	Weyburn, c.	137	62	2	77
18	Remaining parts	800	30	147	917
19	Division No. 3	1,108	44	107	1,171
20	Division No. 4	677	57	61	681
21	Division No. 5	1,255	32	71	1,294
22	Division No. 6	2,676	220	87	2,543
23	Regina, c.	1,664	352	41	1,353
24	Remaining parts	1,012	41	219	1,190
25	Division No. 7	1,417	129	92	1,380
26	Moose Jaw, c.	596	199	14	411
27	Remaining parts	821	19	167	969
28	Division No. 8	1,138	56	146	1,228
29	Swift Current, c.	206	79	5	132
30	Remaining parts	932	28	192	1,096
31	Division No. 9	1,475	36	34	1,473
32	Yorkton, c.	215	98	6	123
33	Remaining parts	1,260	16	106	1,350
34	Division No. 10	1,057	46	60	1,071
35	Division No. 11	2,122	243	94	1,973
36	Saskatoon, c.	1,235	315	37	957
37	Remaining parts	887	28	157	1,016
38	Division No. 12	763	33	139	869
39	Division No. 13	1,097	62	85	1,120
40	Division No. 14	1,080	58	70	1,092
41	Division No. 15	2,309	77	113	2,345
42	Prince Albert, c.	388	162	6	232
43	Remaining parts	1,921	27	219	2,113
44	Division No. 16	1,249	95	80	1,234
45	North Battleford, c.	256	113	4	147
46	Remaining parts	993	18	112	1,087
47	Division No. 17	633	21	61	673
48	Division No. 18	170	4	3	169
	Alberta	**17,649**	**134**	**117**	**17,632**
49	Division No. 1	724	97	90	717
50	Medicine Hat, c.	462	261	8	209
51	Remaining parts	262	7	253	508
52	Division No. 2	1,599	199	20	1,420
53	Lethbridge, c.	581	260	7	328
54	Remaining parts	1,018	42	116	1,092
55	Division No. 3	330	59	83	354
56	Division No. 4	505	21	228	712
57	Division No. 5	437	13	160	584
58	Division No. 6	3,278	331	93	3,040
59	Calgary, c.	2,064	418	35	1,681
60	Remaining parts	1,214	144	289	1,359
61	Division No. 7	857	56	82	883
62	Division No. 8	1,321	84	137	1,374
63	Division No. 9	395	20	62	437
64	Division No. 10	1,586	50	119	1,655
65	Division No. 11	3,305	427	60	2,938
66	Edmonton, c.	2,391	721	24	1,694
67	Remaining parts	914	20	350	1,244
68	Division No. 12	261	7	57	311

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

Births, 1931				Births, 1932				No.
By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	
4,450	1,243	411	3,618	4,087	1,170	444	3,361	1
528	42	434	920	511	26	521	1,006	2
631	60	78	649	581	47	58	592	3
369	100	31	300	314	82	12	244	4
262	22	109	349	267	6	87	348	5
352	28	37	361	312	25	45	332	6
472	45	334	761	501	52	319	768	7
372	20	32	384	359	24	32	367	8
525	16	35	544	582	21	39	600	9
530	1	85	614	491	4	90	577	10
596	48	18	566	598	43	17	572	11
571	16	38	593	548	6	33	575	12
231	10	11	232	257	21	7	243	13
732	7	63	788	790	15	65	840	14
21,331	**94**	**205**	**21,442**	**20,814**	**87**	**185**	**20,912**	
898	24	47	921	813	14	38	837	15
913	32	73	954	839	38	55	856	16
135	48	8	95	116	47	3	72	17
778	26	107	859	723	30	91	784	18
1,023	30	75	1,068	989	30	73	1,032	19
602	34	58	626	547	32	39	554	20
1,140	28	55	1,167	1,189	24	54	1,219	21
2,537	169	51	2,419	2,201	163	48	2,086	22
1,511	293	19	1,237	1,262	262	23	1,023	23
1,026	25	181	1,182	939	26	150	1,063	24
1,319	90	64	1,293	1,246	75	46	1,217	25
512	162	11	361	492	158	9	343	26
807	8	133	932	754	5	125	874	27
1,102	51	114	1,165	1,020	42	93	1,071	28
171	68	4	107	144	59	2	87	29
931	28	155	1,058	876	31	139	984	30
1,424	28	35	1,431	1,493	24	35	1,504	31
181	82	6	105	168	71	14	111	32
1,243	15	98	1,326	1,325	14	82	1,393	33
992	49	52	995	993	21	56	1,028	34
1,923	226	47	1,744	1,736	176	56	1,616	35
1,144	275	18	887	1,009	236	16	789	36
779	18	96	857	727	17	117	827	37
812	41	131	902	704	25	108	787	38
1,044	59	65	1,050	1,023	69	82	1,036	39
1,232	49	73	1,256	1,341	42	64	1,363	40
2,274	78	109	2,305	2,357	76	100	2,381	41
359	154	12	217	359	142	10	227	42
1,915	33	206	2,088	1,998	38	194	2,154	43
1,194	79	62	1,177	1,316	100	69	1,285	44
227	113	7	121	239	132	7	114	45
967	5	94	1,056	1,077	19	113	1,171	46
698	29	83	752	767	40	57	784	47
204	1	14	217	240	1	17	256	48
17,252	**156**	**101**	**17,197**	**16,990**	**121**	**97**	**16,966**	
717	103	82	696	640	72	73	641	49
401	234	5	172	358	183	4	179	50
316	12	220	524	282	7	187	462	51
1,496	177	34	1,353	1,453	154	32	1,331	52
572	260	5	317	526	259	9	276	53
924	36	148	1,036	927	29	157	1,055	54
310	64	83	329	305	52	81	334	55
414	12	168	570	426	17	121	530	56
394	25	170	539	323	14	150	459	57
2,964	276	92	2,780	2,822	243	91	2,670	58
1,883	332	22	1,573	1,726	287	30	1,469	59
1,081	124	250	1,207	1,096	122	227	1,201	60
808	61	70	817	835	32	69	872	61
1,276	93	113	1,296	1,303	125	93	1,271	62
403	18	87	472	405	7	114	512	63
1,478	42	100	1,536	1,398	53	119	1,464	64
3,359	409	37	2,987	3,235	465	45	2,815	65
2,400	728	20	1,692	2,320	787	19	1,552	66
959	21	357	1,295	915	23	371	1,263	67
292	6	54	240	362	10	68	420	68

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

No.	County or Census Division and City, Town, etc.	Births, 1930			
		By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother
	Alberta—Con.				
1	Division No. 13	797	33	40	804
2	Division No. 14	979	28	134	1,085
3	Division No. 15	373	18	30	385
4	Division No. 16	677	22	28	683
5	Division No. 17	225	6	31	250
	British Columbia[3]	**10,867**	**60**	**44**	**10,851**
6	Division No. 1	481	8	17	490
7	Division No. 2	664	12	26	678
8	Nelson, c	133	40	9	102
9	Trail, c	213	11	7	209
10	Remaining parts	318	8	57	367
11	Division No. 3	717	24	24	717
12	Division No. 4	5,789	178	55	5,666
13	New Westminster, c	555	238	14	331
14	North Vancouver, c	195	64	17	148
15	Vancouver, c	4,003	446	74	3,631
16	Remaining parts	1,036	37	557	1,556
17	Division No. 5 A	1,632	53	48	1,627
18	Nanaimo, c	206	53	11	164
19	Victoria, c	734	227	11	518
20	Remaining parts	692	23	276	945
21	Division No. 5 B	91	5	26	112
22	Division No. 6 A	440	31	25	434
23	Kamloops, c	201	91	5	115
24	Remaining parts	239	13	93	319
25	Division No. 6 B	77	1	26	102
26	Division No. 7	189	8	28	209
27	Division No. 8 A	202	13	22	211
28	Division No. 8 B	147	4	15	158
29	Division No. 9 A	7	-	-	7
30	Division No. 9 B	15	-	1	16
31	Division No. 9 C	266	16	18	268
32	Prince Rupert, c	143	31	2	114
33	Remaining parts	123	5	36	154
34	Division No. 9 D	29	-	3	32
35	Division No. 10 A	-	-	-	-
36	Division No. 10 B	5	-	-	5
37	Division No. 10 C	116	5	8	119

TABLE 15. Live births by place of occurrence and place of residence of mother, for cities and towns of 5,000 and over, and for the remaining parts of counties or census divisions, Canada, 1930-1932—Con.

Births, 1931				Births, 1932				No.
By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	By Place of Occurrence	To Non-Resident Mothers	Occurring Elsewhere to Mothers Who Are Residents	By Residence of Mother	
871	35	36	872	828	45	47	830	1
1,115	27	140	1,228	1,150	23	148	1,275	2
419	37	27	409	496	27	34	503	3
742	21	54	775	806	19	31	818	4
194	5	9	198	203	10	28	221	5
10,404	**47**	**74**	**10,431**	**10,214**	**38**	**50**	**10,226**	
431	11	24	444	394	6	23	411	6
698	14	27	711	712	15	20	717	7
191	70	9	130	151	50	4	105	8
217	16	4	205	240	7	6	239	9
290	8	94	376	321	12	64	373	10
720	20	24	724	741	22	21	740	11
5,502	162	49	5,389	5,181	157	34	5,058	12
588	255	30	363	565	268	25	322	13
150	50	16	116	195	68	7	134	14
3,730	407	45	3,368	3,450	404	50	3,096	15
1,034	38	546	1,542	971	35	570	1,506	16
1,447	52	56	1,451	1,472	50	49	1,471	17
154	38	7	123	154	53	7	108	18
688	201	7	494	700	257	17	460	19
605	21	250	834	618	33	318	903	20
86	12	18	92	101	4	23	120	21
429	37	37	429	416	25	27	418	22
215	105	6	116	210	113	6	103	23
214	19	118	313	206	7	116	315	24
64	-	39	103	70	-	44	114	25
184	9	40	215	212	7	31	236	26
193	15	40	218	246	21	23	248	27
176	4	2	174	201	4	17	214	28
5	-	1	6	4	-	-	4	29
17	-	-	17	18	-	2	20	30
280	13	11	284	233	13	12	232	31
140	22	2	120	112	31	2	83	32
146	4	22	164	121	6	34	149	33
52	-	4	56	41	-	4	45	34
-	-	-	-	1	-	-	1	35
2	-	-	2	1	-	-	1	36
112	9	13	116	170	4	10	176	37

TABLE 16. Crude birth rate, population and land area in square miles, for counties and census divisions, Canada, 1931

Counties and Census Divisions[8] in Birth Rate Class	Crude Birth Rate, 1930-32	Population, 1931	Land Area (square miles)
Under 15	.....	**495,242**	**95,209**
Division No. 4, B.C.	14·1	379,858	9,764
Division No. 5A, B.C.	13·3	114,338	5,374
Division No. 9A, B.C.	7·9	718	20,668
Division No. 10A, B.C.	3·0	100	38,016
Division No. 10B, B.C.	11·8	228	21,387
15-19	.....	**3,065,818**	**252,219**
Kings, P.E.I.	17·6	19,147	641
Annapolis, N.S.	19·5	16,297	1,255
Antigonish, N.S.	17·0	10,073	541
Inverness, N.S.	19·3	21,055	1,409
Lunenburg, N.S.	18·9	31,674	1,169
Pictou, N.S.	19·6	39,018	1,124
Victoria, N.S.	16·6	8,009	1,105
Kings, N.B.	18·3	19,807	1,386
Queens, N.B.	19·5	11,219	1,385
Brome, Que.	16·7	12,433	488
Chambly, Que.	18·7	26,801	138
Brant, Ont.	18·3	53,476	421
Bruce, Ont.	19·4	42,286	1,650
Dufferin, Ont.	17·5	14,892	557
Dundas, Ont.	17·6	16,098	384
Durham, Ont.	17·0	25,782	629
Elgin, Ont.	15·2	43,436	720
Frontenac, Ont.	19·7	45,756	1,599
Grenville, Ont.	16·8	16,327	463
Grey, Ont.	18·5	57,699	1,708
Haldimand, Ont.	18·0	21,428	488
Halton, Ont.	15·9	26,558	363
Huron, Ont.	16·3	45,180	1,295
Lambton, Ont.	18·5	54,674	1,124
Lanark, Ont.	19·2	32,856	1,138
Leeds, Ont.	18·5	35,157	900
Lennox, Ont.	17·2	12,004	297
Lincoln, Ont.	18·2	54,199	332
Middlesex, Ont.	16·1	118,241	1,240
Northumberland, Ont.	17·6	31,452	734
Ontario, Ont.	19·5	59,667	853
Oxford, Ont.	17·7	47,825	765
Peel, Ont.	17·2	28,156	469
Perth, Ont.	17·4	51,392	840
Peterborough, Ont.	19·9	43,958	1,415
Prince Edward, Ont.	18·6	16,693	390
Simcoe, Ont.	18·1	83,667	1,663
Victoria, Ont.	17·1	25,844	1,348
Wellington, Ont.	19·1	58,164	1,019
Wentworth, Ont.	18·9	190,019	458
York, Ont.	19·0	856,955	882
Division No. 4, Man.	19·4	18,253	2,466
Division No. 6, Man.	17·5	283,828	2,436
Division No. 7, Man.	17·0	36,912	2,578
Division No. 8, Man.	17·7	19,846	2,160
Division No. 9, Man.	17·2	45,414	1,217
Division No. 5, Alta.	19·8	26,651	7,681
Division No. 9, Alta.	19·3	24,503	14,415
Division No. 1, B.C.	19·9	22,566	15,984
Division No. 2, B.C.	17·4	40,455	13,343
Division No. 3, B.C.	17·9	40,523	10,729
Division No. 5B, B.C.	16·4	6,595	7,832
Division No. 6A, B.C.	17·1	25,030	16,357
Division No. 7, B.C.	17·4	12,658	22,187
Division No. 8A, B.C.	19·4	11,626	39,621
Division No. 8B, B.C.	18·4	9,908	32,364
Division No. 9C, B.C.	16·6	15,676	24,034
20-24	.....	**4,120,949**	**518,481**
Queens, P.E.I.	20·0	37,391	765
Colchester, N.S.	22·8	25,051	1,451
Cumberland, N.S.	22·3	36,366	1,683
Digby, N.S.	22·4	18,353	970
Guysborough, N.S.	24·3	15,443	1,611
Halifax, N.S.	23·5	100,204	2,063
Hants, N.S.	24·9	19,393	1,229
Kings, N.S.	20·2	24,357	842
Queens, N.S.	22·5	10,612	983
Richmond, N.S.	20·8	11,098	489
Shelburne, N.S.	22·7	12,485	979
Yarmouth, N.S.	20·6	20,939	838
Albert, N.B.	21·6	7,679	687
Carleton, N.B.	20·6	20,796	1,311
Charlotte, N.B.	20·5	21,337	1,254
St. John, N.B.	21·0	61,613	616
Sunbury, N.B.	24·4	6,999	1,088
Westmorland, N.B.	21·9	57,506	1,442
York, N.B.	21·3	32,454	3,576
Argenteuil, Que.	21·7	18,976	783
Beauharnois, Que.	24·8	25,163	147
Châteauguay, Que.	23·2	13,125	265
Compton, Que.[8]	24·6	21,917	933
Huntingdon, Que.	21·2	12,345	361
Iberville, Que.	24·9	9,402	198
Missisquoi, Que.	23·2	19,636	375
Montreal and Jesus Islands, Que.[8]	23·2	1,020,018	294
Rouville, Que.	24·8	13,776	243
Sherbrooke, Que.[7]	24·8	37,386	238
St-Hyacinthe, Que.	24·5	25,854	278
Vaudreuil, Que.	23·1	12,015	201
Addington, Ont.	22·8	6,879	873
Algoma, Ont.	24·7	46,444	19,320
Carleton, Ont.	20·1	170,040	947
Essex, Ont.	22·5	159,780	707
Glengarry, Ont.	22·0	18,666	478
Hastings, Ont.	22·4	58,846	2,323
Kenora, Ont.	21·4	21,946	18,150
Kent, Ont.	20·6	62,865	918
Manitoulin, Ont.	24·3	10,734	1,588
Muskoka, Ont.	21·0	20,985	1,585
Norfolk, Ont.	20·2	31,359	634
Parry Sound, Ont.	24·8	25,900	4,336
Rainy River, Ont.	22·3	17,359	7,276
Renfrew, Ont.	23·1	52,227	3,009
Thunder Bay, Ont.	20·9	65,118	52,471
Waterloo, Ont.	20·3	89,852	516
Welland, Ont.	20·3	82,731	387
Division No. 3, Man.	21·9	26,753	2,577
Division No. 5, Man.	21·0	46,228	5,256
Division No. 10, Man.	20·7	17,916	2,377
Division No. 11, Man.	20·5	28,100	2,914
Division No. 12, Man.	23·9	24,344	3,240
Division No. 13, Man.	22·9	24,263	3,324
Division No. 14, Man.	22·9	25,978	3,636
Division No. 15, Man.	24·3	10,008	2,304
Division No. 16, Man.	24·5	30,669	176,637
Division No. 1, Sask.	21·4	41,544	5,944
Division No. 2, Sask.	21·8	42,831	6,686
Division No. 3, Sask.	23·3	46,881	7,646
Division No. 4, Sask.	22·0	28,126	7,570
Division No. 5, Sask.	22·7	53,948	5,760
Division No. 6, Sask.	21·4	109,906	6,787
Division No. 7, Sask.	20·5	63,230	7,471
Division No. 8, Sask.	23·4	49,361	9,264
Division No. 9, Sask.	24·3	60,539	5,010
Division No. 10, Sask.	24·6	41,890	4,860
Division No. 11, Sask.	20·2	87,076	5,979
Division No. 12, Sask.	21·0	40,612	5,982
Division No. 1, Alta.	23·7	28,849	7,323
Division No. 2, Alta.	23·9	57,186	6,342
Division No. 3, Alta.	22·5	15,066	7,018
Division No. 4, Alta.	20·8	29,067	6,119
Division No. 6, Alta.	20·1	140,624	10,595
Division No. 7, Alta.	22·5	38,106	6,684
Division No. 8, Alta.	21·5	61,016	6,510
Division No. 11, Alta.	23·0	126,832	4,753
Division No. 6B, B.C.	21·2	4,995	15,063
Division No. 10C, B.C.	20·5	6,685	23,130
25-29	.....	**949,247**	**162,671**
Prince, P.E.I.	25·5	31,500	778
Cape Breton, N.S.	26·5	02,419	072
Northumberland, N.B.	27·0	34,124	4,711
Victoria, N.B.	29·2	14,907	2,092
Berthier, Que.	27·4	19,506	1,816
Deux-Montagnes, Que.	26·4	14,284	279
Laprairie, Que.	26·1	13,491	170
L'Assomption, Que.	29·2	15,323	247
Lévis, Que.	27·7	35,656	272

For footnotes, see those of corresponding number on pages 367, 368 and 371.

TABLE 16. Crude birth rate, population and land area in square miles, for counties and census divisions, Canada, 1931—Con.

Counties and Census Divisions[5] in Birth Rate Class	Crude Birth Rate, 1930-32	Population, 1931	Land Area (square miles)
25-29—con.			
Montcalm, Que.	29·3	13,865	3,894
Napierville, Que.	27·0	7,600	149
Pontiac, Que.	25·7	21,241	9,560
Richelieu, Que.	27·7	21,483	221
Soulanges, Que.	25·3	9,099	136
Stanstead, Que.	25·3	25,118	432
St-Jean, Que.	25·9	17,649	205
Verchères, Que.	28·1	12,603	199
Haliburton, Ont.	25·8	5,997	1,486
Nipissing, Ont.	29·0	41,207	7,560
Prescott, Ont.	27·5	24,596	494
Russell, Ont.	28·7	18,487	407
Stormont, Ont.	25·7	32,524	412
Temiskaming, Ont.	26·7	37,043	5,896
Division No. 2, Man.	29·5	38,810	2,320
Division No. 13, Man.	25·1	42,632	6,848
Division No. 14, Man.	26·8	46,222	13,419
Division No. 15, Man.	28·0	83,697	8,082
Division No. 16, Man.	25·3	48,736	8,912
Division No. 17, Man.	26·9	27,315	6,913
Division No. 10, Alta.	26·7	58,049	6,180
Division No. 12, Alta.	25·8	13,815	13,083
Division No. 16, Alta.	27·2	27,945	11,100
Division No. 9B, B.C.	27·7	638	39,456
Division No. 9D, B.C.	26·4	1,666	3,970
30-34	.....	**1,068,507**	**267,814**
Kent, N.B.	31·0	23,478	1,749
Arthabaska, Que.	32·0	27,159	666
Bagot, Que.	30·4	16,914	346
Bellechasse, Que.	33·8	22,006	653
Bonaventure, Que.	33·9	32,432	3,464
Champlain, Que.	34·8	59,935	8,586
Drummond, Que.	32·5	26,179	532
Hull, Que.	31·9	63,870	2,432
Joliette, Que.	31·7	27,585	2,506
Kamouraska, Que.	32·4	23,954	1,038
L'Islet, Que.	32·9	19,404	773
Lotbinière, Que.	33·1	23,034	726
Maskinongé, Que.	32·0	16,039	2,378
Mégantic, Que.	34·1	35,492	780
Montmagny, Que.	32·0	20,239	630
30-34—Con.			
Montmorency, Que.	33·2	16,955	2,137
Nicolet, Que.	30·4	28,673	626
Papineau, Que.	30·7	29,246	1,581
Portneuf, Que.	32·7	35,890	1,440
Quebec, Que.	31·6	170,915	2,745
Richmond, Que.	30·6	24,956	544
Shefford, Que.	30·6	28,262	567
Terrebonne, Que.	30·8	38,611	782
Wolfe, Que.	34·2	16,911	680
Yamaska, Que.	30·8	16,820	365
Cochrane, Ont.	30·4	58,033	52,237
Sudbury, Ont.	31·1	58,251	18,058
Division No. 1, Man.	32·3	22,817	4,281
Division No. 18, Sask.	33·8	6,339	114,833
Division No. 13, Alta.	33·5	24,936	8,103
Division No. 14, Alta.	30·3	39,508	8,731
Division No. 15, Alta.	31·6	13,664	22,845
35-39	.....	**505,671**	**299,384**
Gloucester, N.B.	39·3	23,693	76,725
Madawaska, N.B.	37·1	44,793	1,128
Restigouche, N.B.	35·8	22,940	2,273
Abitibi, Que.	36·7	27,994	842
Beauce, Que.	37·7	25,681	1,370
Charlevoix, Que.	38·0	45,617	4,551
Dorchester, Que.	38·3		
Frontenac, Que.	37·4	20,140	2,392
Gaspé, Que.	35·1	33,151	2,089
Iles-de-la-Madeleine, Que.[4]	38·2	19,577	87,680
Labelle, Que.	35·8	69,095	1,820
Rimouski, Que.	39·2	20,609	8,977
Saguenay, Que.[6]	35·9	50,294	1,806
St-Maurice, Que.	37·5	41,914	1,870
Témiscouata, Que.	37·8	24,527	1,273
Division No. 17, Alta.	35·8	29,859	3,270
40 and over	38·5	5,788	101,318
Chicoutimi, Que.	44·1	**151,249**	**44,886**
Lac-St-Jean, Que.	45·1	55,724	17,800
Matane, Que.	41·5	50,253	23,590
		45,272	3,496

TABLE 17. Correlation of standardized birth rates with percentage French and with percentage Roman Catholic for (1) a sample of the counties or census divisions exclusive of cities and towns of 5,000 and over, (2) cities and towns of 5,000-10,000, (3) cities and towns of 10,000-30,000 and (4) cities of 30,000 and over

County or Census Division	Standardized Birth Rate, 1930-32	P.C. French, 1931	P.C. Roman Catholic, 1931
SAMPLE OF COUNTIES AND CENSUS DIVISIONS EXCLUSIVE OF CITIES AND TOWNS OF 5,000 AND OVER			
Chicoutimi, remaining parts, Que.	48·8	94·3	97·5
Restigouche, remaining parts, N.B.	44·0	68·7	81·0
Belleehasse, Que.	41·5	99·6	100·0
Division No. 1, Man.	39·7	21·2	46·5
Kamouraska, Que.	39·4	99·4	99·9
Rimouski, remaining parts, Que.	38·3	97·4	99·9
Arthabaska, remaining parts, Que.	36·9	98·5	99·5
Division No. 15, Alta.	36·8	27·4	55·4
Russell, Ont.	35·5	79·2	82·0
Portneuf, Que.	34·8	96·6	98·7
Yamaska, Que.	34·4	98·2	99·7
Maskinongé, Que.	34·1	98·8	99·7
Montcalm, Que.	33·2	92·7	96·3
Division No. 17, Sask.	31·9	12·0	26·6
Napierville, Que.	31·6	98·1	99·2
Prescott, remaining parts, Ont.	31·5	77·5	84·1
L'Assomption, Que.	31·4	96·4	97·7
Terrebonne, remaining parts, Que.	31·1	91·2	93·4
Drummond, remaining parts, Que.	30·9	92·2	93·8
Division No. 11, remaining parts, Alta.	30·7	10·0	29·6
Parry Sound, Ont.	29·5	9·4	19·8
Division No. 13, Sask.	29·2	2·6	31·7
Colchester, remaining parts, N.S.	29·1	2·7	3·2
Division No. 9, remaining parts, Sask.	28·6	0·6	34·0
Shelburne, N.S.	27·8	1·6	1·5
St-Jean, remaining parts, Que.	27·7	89·1	90·4
Halifax, remaining parts, N.S.	27·6	8·5	23·8
Division No. 10C, B.C.	27·2	5·3	22·2
Division No. 13, Man.	26·9	9·4	50·9
Manitoulin, Ont.	26·6	3·7	25·8
Division No. 3, Alta.	26·4	2·7	16·2
Division No. 7, Alta.	26·4	4·5	18·8
Queens, remaining parts, P.E.I.	26·4	7·7	31·9
Thunder Bay, remaining parts, Ont.	26·4	6·4	31·8
Division No. 8A, B.C.	26·0	4·9	24·8
Division No. 5, Sask.	25·7	2·4	23·8
Huntingdon, Que.	25·5	47·9	62·4
Division No. 5, remaining parts, Man.	24·9	4·1	46·0
Westmorland, remaining parts, N.B.	24·9	44·4	48·9
Sherbrooke, remaining parts, Que.	24·6	58·8	62·9
Division No. 1, Sask.	24·2	6·8	21·8
Carleton, N.B.	23·7	1·1	9·6
Norfolk, remaining parts, Ont.	23·1	1·9	11·3
Division No. 9C, remaining parts, B.C.	23·0	2·0	11·2
Frontenac, remaining parts, Que.	23·0	6·0	18·3
Bruce, Ont.	22·4	1·7	14·9
Kings, N.B.	21·7	1·5	9·7
Lanark, remaining parts, Ont.	21·7	3·6	16·7
Lunenburg, N.S.	21·2	7·0	1·9
Dundas, Ont.	20·7	7·7	10·0
Division No. 6B, B.C.	20·2	1·2	15·5
Haldimand, Ont.	20·1	1·6	6·7
Chambly, remaining parts, Que.	20·0	69·6	75·8
Welland, remaining parts, Ont.	19·5	2·7	21·9
Huron, Ont.	19·4	2·3	8·7
Division No. 9, Man.	18·7	3·6	19·4
Division No. 2, remaining parts, B.C.	15·9	2·6	16·4
Total (57 cases)	1,612·4	1,988·0	2,641·1
Average	28·3	34·9	46·3
Standard deviation	6·8	40·0	35·1
Correlation with standardized birth rate	.....	·67	·71

City or Town	Standardized Birth Rate, 1930-32	P.C. French, 1931	P.C. Roman Catholic, 1931
CITIES AND TOWNS OF 5,000-10,000			
Jonquière, Que.	49·7	97·0	99·3
La Tuque, Que.	41·2	90·6	94·7
New Waterford, N.S.	40·5	12·8	71·7
Cap-de-la-Madeleine, Que.	39·5	96·6	98·9
Rimouski, Que.	38·7	96·8	99·6
Drummondville, Que.	37·5	86·2	90·1
Edmunston, N.B.	35·9	82·4	88·4
Eastview, Ont.	34·4	71·0	82·0
Hawkesbury, Ont.	34·4	84·6	88·2
Sydney Mines, N.S.	34·3	3·1	48·2
Grand'Mère, Que.	34·2	90·7	92·9
Magog, Que.	32·1	83·6	85·4
St-Jérôme, Que.	30·9	97·3	98·7
Springhill, N.S.	30·7	6·4	16·1
Victoriaville, Que.	30·7	97·4	99·5
North Sydney, N.S.	28·4	4·3	39·4
Campbellton, N.B.	28·3	39·1	62·6
Trail, B.C.	27·1	1·6	30·1
Lauzon, Que.	26·6	97·0	99·7
Port Colborne, Ont.	26·6	5·1	41·6
Stellarton, N.S.	26·1	3·7	28·7
Rivière-du-Loup, Que.	25·9	97·5	99·1
Trenton, Ont.	25·5	6·1	16·9
Fort Frances, Ont.	24·2	13·1	34·9
Longueuil, Que.	23·7	74·8	81·3
Pembroke, Ont.	22·9	26·1	46·2
St-Laurent, Que.	22·1	78·9	85·2
Yorkton, Sask.	20·9	0·8	18·9
Midland, Ont.	20·8	18·9	26·4
New Toronto, Ont.	20·7	4·3	23·0
Renfrew, Ont.	20·7	15·8	48·5
Prince Albert, Snsk.	20·4	7·9	24·1
Swift Current, Sask.	20·2	2·0	10·9
Thorold, Ont.	20·1	4·0	40·9
Kamloops, B.C.	19·9	3·1	16·3
Nanaimo, B.C.	19·7	0·6	11·5
North Battleford, Sask.	19·7	4·8	18·4
Kenora, Ont.	19·5	8·8	28·5
Collingwood, Ont.	19·4	2·0	5·5
Dartmouth, N.S.	19·4	5·8	26·5
Yarmouth, N.S.	19·4	26·8	37·0
Orillia, Ont.	19·2	2·1	11·4
Cobourg, Ont.	18·8	1·7	18·2
Mimico, Ont.	18·8	1·4	15·1
New Glasgow, N.S.	18·7	5·7	25·2
Nelson, B.C.	18·5	3·4	15·7
Lindsay, Ont.	18·4	2·5	17·7
Brockville, Ont.	18·2	6·8	18·3
Transcona, Man.	18·2	10·3	43·9
Barrie, Ont.	18·0	1·1	9·4
Prince Rupert, B.C.	18·0	2·7	13·0
Portage la Prairie, Man.	17·7	3·4	24·7
Ingersoll, Ont.	17·6	1·5	8·3
Smith's Falls, Ont.	17·6	4·0	15·5
Truro, N.S.	17·1	2·0	7·0
Simcoe, Ont.	17·0	2·4	6·0
Dundas, Ont.	16·8	2·1	17·6
Preston, Ont.	16·8	2·4	27·3
Waterloo, Ont.	16·8	2·0	26·9
Brampton, Ont.	16·6	0·5	4·5
North Vancouver, B.C.	16·4	1·8	8·6
Amherst, N.S.	16·1	19·7	27·4
Fort Erie, Ont.	15·6	2·1	15·8
Fredericton, N.B.	15·4	2·6	14·6
Weyburn, Sask.	14·7	3·2	17·8
St-Lambert, Que.	11·3	30·7	38·3
Whitby, Ont.	10·6	1·1	13·0
Total (67 cases)	1,571·8	1,768·6	2,706·6
Average	23·5	26·4	40·4
Standard deviation	8·0	36·0	31·9
Correlation with standardized birth rate	.....	·72	·80

For footnotes, see those of corresponding number on pages 368 and 371.

TABLE 17. Correlation of standardized birth rates with percentage French and with percentage Roman Catholic for (1) a sample of the counties or census divisions exclusive of cities and towns of 5,000 and over, (2) cities and towns of 5,000-10,000, (3) cities and towns of 10,000-30,000 and (4) cities of 30,000 and over—Con.

City or Town	Standardized Birth Rate, 1930-32	P.C. French, 1931	P.C. Roman Catholic, 1931
CITIES AND TOWNS OF 10,000-30,000			
Chicoutimi, Que.	43·4	95·3	99·6
Thetford Mines, Que.	40·3	94·8	96·5
Shawinigan Falls, Que.	38·3	92·6	94·3
Sudbury, Ont.	33·9	35·9	58·2
Hull, Que.	33·2	90·1	96·0
Timmins, Ont.	32·1	35·0	59·1
Glace Bay, N.S.	31·7	5·5	51·7
Granby, Que.	30·5	86·0	88·9
Cornwall, Ont.	30·4	43·6	58·3
Valleyfield (Salaberry-de-), Que.	29·0	87·6	91·0
Sorel, Que.	28·9	97·5	97·6
Joliette, Que.	28·4	95·7	97·1
Sydney, N.S.	24·9	5·7	49·2
East Windsor, Ont.	24·7	28·0	51·5
Sault Ste. Marie, Ont.	24·3	9·3	38·7
North Bay, Ont.	23·8	22·9	42·2
Lévis, Que.	23·6	97·6	99·1
St-Jean, Que.	23·5	88·5	93·0
St-Hyacinthe, Que.	21·3	98·3	98·9
Sandwich, Ont.	21·1	23·6	39·7
Lachine, Que.	20·7	57·1	67·6
Sherbrooke, Que.	20·7	75·6	80·5
Fort William, Ont.	20·6	4·0	37·6
Lethbridge, Alta.	20·6	2·0	20·1
Oshawa, Ont.	20·5	2·1	16·1
Sarnia, Ont.	19·9	4·2	14·0
Welland, Ont.	19·7	8·5	34·2
Chatham, Ont.	19·3	8·2	17·8
New Westminster, B.C.	19·1	1·9	10·6
Peterborough, Ont.	19·1	3·7	23·5
Niagara Falls, Ont.	18·8	2·8	23·2
Port Arthur, Ont.	18·6	4·9	25·8
Guelph, Ont.	18·4	2·1	22·5
Owen Sound, Ont.	18·4	2·1	7·0
St. Catharines, Ont.	18·4	2·8	19·8
Kingston, Ont.	18·2	4·6	22·7
Moncton, N.B.	18·2	33·1	43·0
Medicine Hat, Alta.	17·7	2·2	12·3
Belleville, Ont.	17·6	3·9	15·3
St. Boniface, Man.	17·5	36·6	59·7
Stratford, Ont.	17·5	2·4	13·9
Charlottetown, P.E.I.	16·9	9·8	47·4
Moose Jaw, Sask.	16·5	2·6	11·1
Walkerville, Ont.	15·8	6·5	14·6
Galt, Ont.	15·7	1·5	9·7
Brandon, Man.	15·4	1·6	19·5
St. Thomas, Ont.	15·1	1·5	8·0
Woodstock, Ont.	14·8	1·6	9·3
Outremont, Que.	5·5	36·9	51·4
Westmount, Que.	4·3	13·2	26·0
Total (50 cases)	1,106·8	1,573·5	2,284·8
Average	22·1	31·5	45·7
Standard deviation	7·6	36·3	31·6
Correlation with standardized birth rate		·63	·68

City or Town	Standardized Birth Rate, 1930-32	P.C. French, 1931	P.C. Roman Catholic, 1931
CITIES OF 30,000 AND OVER			
Trois-Rivières, Que.	31·5	93·6	96·0
Quebec, Que.	27·4	91·3	96·2
Montreal, Que.	20·0	63·9	76·3
Verdun, Que.	19·7	38·3	51·4
Saint John, N.B.	19·6	5·7	31·3
Halifax, N.S.	19·4	6·1	40·7
Windsor, Ont.	18·5	13·8	33·5
Brantford, Ont.	18·2	1·2	14·5
Edmonton, Alta.	17·8	4·6	18·6
Kitchener, Ont.	17·8	2·3	28·0
Regina, Sask.	17·8	2·0	19·8
Hamilton, Ont.	17·1	1·6	18·5
Saskatoon, Sask.	16·6	3·1	15·1
Calgary, Alta.	16·4	2·1	12·6
Ottawa, Ont.	15·8	29·5	48·2
Toronto, Ont.	14·5	1·7	14·3
London, Ont.	14·0	1·2	11·5
Winnipeg, Man.	13·1	2·3	21·5
Vancouver, B.C.	12·9	1·8	9·6
Victoria, B.C.	12·9	1·3	6·1
Total (20 cases)	361·0	367·4	663·7
Average	18·1	18·4	20·2
Standard deviation	4·5	29·2	26·9
Correlation with standardized birth rate		·84	·86

TABLE 18. Correlation of crude birth rates with percentage of population French and percentage of population Roman Catholic, showing the correcting factor for these influences and the crude birth rate independent of them for counties and census divisions of Canada exclusive of cities and towns of 5,000 and over

County or Census Division[8]	Crude Birth Rate, 1930-32	P.C. of Population, French, 1931	P.C. of Population, Roman Catholic, 1931	Correcting Factor[1] for French and Roman Catholic	Crude Birth Rate Independent of French and Roman Catholic
Division No. 10A, B.C.	3·0	0·0	53·0	1·199	2·5
Division No. 9A, B.C.	7·9	2·5	28·4	1·115	7·1
Division No. 10B, B.C.	11·8	0·0	82·9	1·311	9·0
Division No. 5A, remaining parts, B.C.	13·0	1·5	10·4	1·044	12·5
Division No. 2, remaining parts, B.C.	13·8	2·6	16·4	1·070	12·9
Division No. 4, remaining parts, B.C.	14·3	2·7	11·7	1·053	13·6
Wentworth, remaining parts, Ont.	14·5	1·5	9·3	1·040	13·9
Elgin, remaining parts, Ont.	15·1	1·3	4·3	1·020	14·8
Middlesex, remaining parts, Ont.	15·6	0·9	7·0	1·029	15·2
Halton, Ont.	15·9	1·1	6·1	1·026	15·5
St. John, remaining parts, N.B.	16·0	6·6	27·9	1·126	14·2
Lincoln, remaining parts, Ont.	16·0	1·8	11·2	1·048	15·3
Huron, Ont.	16·3	2·3	8·7	1·040	15·7
Brant, remaining parts, Ont.	16·4	1·1	5·8	1·025	16·0
Division No. 5B, B.C.	16·4	1·2	15·5	1·062	15·4
Victoria, N.S.	16·6	1·8	32·8	1·129	14·7
Victoria, remaining parts, Ont.	16·6	1·2	10·8	1·044	15·9
Brome, Que.	16·7	45·3	45·0	1·315	12·7
Division No. 9C, remaining parts, B.C.	16·7	2·0	11·2	1·049	15·9
Grenville, Ont.	16·8	5·5	14·8	1·073	15·7
Division No. 6A, remaining parts, B.C.	16·8	2·7	20·7	1·086	15·5
Perth, remaining parts, Ont.	16·9	1·0	9·2	1·038	16·3
Antigonish, N.S.	17·0	21·7	86·7	1·396	12·2
Durham, Ont.	17·0	0·6	3·5	1·015	16·7
Peel, remaining parts, Ont.	17·1	0·4	9·7	1·038	16·5
Lambton, remaining parts, Ont.	17·2	2·3	7·8	1·037	16·6
Lennox, Ont.	17·2	1·6	9·0	1·039	16·6
Northumberland, remaining parts, Ont.	17·2	2·4	9·1	1·042	16·5
Ontario, remaining parts, Ont.	17·2	1·0	8·5	1·035	16·6
Division No. 9, Man.	17·2	3·6	19·4	1·084	15·9
Division No. 7, remaining parts, Man.	17·3	4·6	10·4	1·054	16·4
Division No. 7, B.C.	17·4	2·2	17·3	1·072	16·2
Dufferin, Ont.	17·5	0·3	2·0	1·008	17·4
Simcoe, remaining parts, Ont.	17·5	11·7	20·3	1·114	15·7
Kings, P.E.I.	17·6	7·2	49·5	1·209	14·6
Dundas, Ont.	17·6	7·7	10·0	1·062	16·6
Division No. 8, Man.	17·7	2·7	10·1	1·047	16·9
Division No. 3, B.C.	17·9	2·5	15·7	1·067	16·8
Haldimand, Ont.	18·0	1·6	6·7	1·030	17·5
Welland, remaining parts, Ont.	18·0	2·7	21·9	1·091	16·5
Wellington, remaining parts, Ont.	18·0	1·0	12·9	1·052	17·1
Leeds, remaining parts, Ont.	18·1	4·9	16·7	1·079	16·8
Pictou, remaining parts, N.S.	18·3	5·1	15·8	1·076	17·0
Kings, N.B.	18·3	1·5	9·7	1·041	17·6
Montreal and Jesus Islands, remaining parts, Que.[5]	18·3	70·2	78·2	1·520	12·0
Oxford, remaining parts, Ont.	18·3	0·9	4·3	1·019	18·0
Grey, remaining parts, Ont.	18·4	0·7	5·9	1·024	18·0
Division No. 8B, B.C.	18·4	2·9	30·9	1·125	16·4
Prince Edward, Ont.	18·6	1·4	4·3	1·021	18·2
Chambly, remaining parts, Que.	18·8	69·6	75·8	1·509	12·5
Lunenburg, N.S.	18·9	7·0	1·9	1·030	18·3
Carleton, remaining parts, Ont.	19·1	16·1	31·3	1·170	16·3
Peterborough, remaining parts, Ont.	19·1	2·0	17·5	1·072	17·8
Frontenac, remaining parts, Ont.	19·2	5·0	18·3	1·085	17·7
Inverness, N.S.	19·3	23·0	71·0	1·341	14·4
Division No. 9, Alta.	19·3	2·9	13·9	1·062	18·2
Beauharnois, remaining parts, Que.	19·4	79·3	88·1	1·587	12·2
Bruce, Ont.	19·4	1·7	14·9	1·061	18·3
Division No. 4, Man.	19·4	2·2	9·7	1·044	18·6
Division No. 8A, B.C.	19·4	4·9	24·8	1·109	17·5
Annapolis, N.S.	19·5	2·7	4·1	1·024	19·0
Queens, N.B.	19·5	3·1	10·8	1·051	18·6
Lanark, remaining parts, Ont.	19·7	3·6	16·7	1·074	18·3
Division No. 5, Alta.	19·8	2·1	12·5	1·054	18·8
Division No. 1, B.C.	19·9	3·2	30·3	1·124	17·7
Division No. 11, remaining parts, Sask.	20·1	2·6	19·9	1·083	18·6
Kings, N.S.	20·2	2·3	5·6	1·028	19·6
Norfolk, remaining parts, Ont.	20·2	1·9	11·3	1·049	19·3
Division No. 6, remaining parts, Sask.	20·2	4·1	30·3	1·127	17·9
Yarmouth, remaining parts, N.S.	20·4	48·7	50·8	1·348	15·1
Waterloo, remaining parts, Ont.	20·4	1·6	15·3	1·063	19·2
Charlotte, N.B.	20·5	1·6	11·7	1·049	19·5
Kent, remaining parts, Ont.	20·5	12·5	26·1	1·138	18·0
Division No. 11, Man.	20·5	2·3	18·3	1·076	19·1
Division No. 10C, B.C.	20·5	5·3	22·2	1·101	18·6
Carleton, N.B.	20·6	1·1	9·6	1·040	19·8

[1] Based upon equation $X_1 = 18·9 + 0·061\ X_2 + 0·071\ X_3$. The expected rates from this equation converted into an index based on 18·9 appear as above.

For remainder of footnotes, see those of corresponding number on pages 367, 368 and 371.

TABLE 18. Correlation of crude birth rates with percentage of population French and percentage of population Roman Catholic, showing the correcting factor for these influences and the crude birth rate independent of them for counties and census divisions of Canada exclusive of cities and towns of 5,000 and over—Con.

County or Census Division	Crude Birth Rate, 1930-32	P.C. of Population, French, 1931	P.C. of Population, Roman Catholic, 1931	Correcting Factor[1] for French and Roman Catholic	Crude Birth Rate Independent of French and Roman Catholic
York, remaining parts, Ont.	20·6	1·3	8·0	1·034	19·9
Queens, remaining parts, P.E.I.	20·7	7·7	31·9	1·145	18·1
Rainy River, remaining parts, Ont.	20·7	8·4	24·1	1·118	18·5
Division No. 10, Man.	20·7	2·6	22·7	1·094	18·9
Richmond, N.S.	20·8	58·7	79·3	1·487	14·0
Division No. 4, Alta.	20·8	2·9	10·3	1·048	19·8
Muskoka, Ont.	21·0	4·8	10·4	1·055	19·9
Division No. 12, Sask.	21·0	5·5	15·3	1·075	19·5
Huntingdon, Que.	21·2	47·9	62·4	1·389	15·3
Division No. 6B, B.C.	21·2	3·1	54·0	1·213	17·5
Westmorland, remaining parts, N.B.	21·3	44·4	48·9	1·327	16·1
Division No. 5, remaining parts, Man.	21·3	4·1	46·0	1·186	18·0
Thunder Bay, remaining parts, Ont.	21·4	6·4	31·8	1·140	18·8
Division No. 1, Sask.	21·4	6·8	21·8	1·104	19·4
Division No. 8, Alta.	21·5	2·4	14·1	1·061	20·3
Albert, N.B.	21·6	1·1	7·0	1·030	21·0
Argenteuil, Que.	21·7	58·1	61·0	1·417	15·3
St-Hyacinthe, remaining parts, Que.	21·8	99·4	99·7	1·695	12·9
Essex, remaining parts, Ont.	21·9	27·9	41·0	1·244	17·6
Kenora, remaining parts, Ont.	21·9	5·9	24·0	1·109	19·7
Division No. 3, Man.	21·9	12·0	21·7	1·120	19·6
Stanstead, remaining parts, Que.	22·0	60·3	61·7	1·426	15·4
Glengarry, Ont.	22·0	49·3	68·3	1·416	15·5
Division No. 4, Sask.	22·0	8·7	21·8	1·110	19·8
Cape Breton, remaining parts, N.S.	22·1	9·3	58·5	1·250	17·7
Division No. 7, remaining parts, Sask.	22·1	2·9	9·1	1·044	21·2
Division No. 6, remaining parts, Alta.	22·1	2·6	16·6	1·071	20·6
Stormont, remaining parts, Ont.	22·2	38·6	50·6	1·315	16·9
Digby, N.S.	22·4	50·0	53·5	1·362	16·4
Cumberland, remaining parts, N.S.	22·5	6·4	11·1	1·062	21·2
Queens, N.S.	22·5	4·1	6·7	1·038	21·7
Division No. 2, remaining parts, Sask.	22·5	4·8	21·7	1·097	20·5
Division No. 3, Alta.	22·5	2·7	16·2	1·070	21·0
Division No. 7, Alta.	22·5	4·5	18·8	1·085	20·7
York, remaining parts, N.B.	22·6	2·1	10·2	1·045	21·6
Shelburne, N.S.	22·7	1·6	1·5	1·011	22·5
Renfrew, Ont.	22·7	11·3	14·4	1·192	19·0
Division No. 5, Sask.	22·7	2·4	23·8	1·097	20·7
Addington, Ont.	22·8	5·7	23·3	1·106	20·6
Division No. 6, remaining parts, Man.	22·8	18·2	30·2	1·172	19·5
Division No. 13, Man.	22·9	9·4	50·9	1·222	18·7
Division No. 14, Man.	22·9	1·2	34·7	1·134	20·2
Sherbrooke, remaining parts, Que.	23·0	58·8	62·9	1·426	16·1
Vaudreuil, Que.	23·1	86·7	90·3	1·619	14·3
Châteauguay, Que.	23·2	74·9	79·0	1·539	15·1
Missisquoi, Que.	23·2	67·9	71·9	1·489	15·6
Hastings, remaining parts, Ont.	23·2	6·5	17·3	1·086	21·4
Division No. 3, Sask.	23·3	17·1	32·1	1·176	19·8
Halifax, remaining parts, N.S.	23·5	8·5	23·8	1·117	21·0
Colchester, remaining parts, N.S.	23·6	2·7	3·2	1·021	23·1
Division No. 8, remainiag parts, Sask.	23·7	2·1	20·1	1·082	21·9
St-Jean, remaining parts, Que.	23·8	89·1	90·4	1·627	14·6
Division No. 12, Man.	23·9	7·6	52·4	1·221	19·6
Guysborough, N.S.	24·3	11·2	36·0	1·171	20·8
Manitoulin, Ont.	24·3	3·7	25·8	1·109	21·9
Division No. 15, Man.	24·3	8·9	16·4	1·090	22·3
Division No. 2, remaining parts, Alta.	24·3	3·3	24·1	1·101	22·1
Sunbury, N.B.	24·4	10·1	18·1	1·101	22·2
Algoma, remaining parts, Ont.	24·4	19·5	36·2	1·199	20·4
Division No. 9, remaining parts, Sask.	24·4	0·6	34·0	1·130	21·6
Division No. 16, Man.	24·5	7·9	35·1	1·157	21·2
Compton, Que.	24·6	67·0	69·0	1·475	16·7
Division No. 10, Sask.	24·6	1·9	31·3	1·124	21·9
Rouville, Que.	24·8	95·2	95·4	1·666	14·9
Parry Sound, Ont.	24·8	9·4	19·8	1·105	22·4
Iberville, Que.	24·9	95·6	98·2	1·677	14·8
Hants, N.S.	24·9	1·6	5·5	1·026	24·3
Division No. 13, Sask.	25·1	2·6	31·7	1·127	22·3
Soulanges, Que.	25·3	94·4	96·8	1·668	15·2
Prince, P.E.I.	25·5	26·7	49·3	1·271	20·1
Pontiac, Que.	25·7	41·2	63·8	1·373	18·7
Haliburton, Ont.	25·8	2·3	3·0	1·019	25·3
Division No. 16, remaining parts, Sask.	25·8	11·7	33·6	1·164	22·2
Division No. 12, Alta.	25·8	3·2	26·3	1·109	23·3
Laprairie, Que.	26·1	75·1	95·0	1·599	16·3
Deux-Montagnes, Que.	26·4	94·0	96·5	1·666	15·8
Richelieu, remaining parts, Que.	26·4	99·5	99·8	1·696	15·6
Prescott, remaining parts, Ont.	26·4	77·5	84·1	1·566	16·9

TABLE 18. Correlation of crude birth rates with percentage of population French and percentage of population Roman Catholic, showing the correcting factor for these influences and the crude birth rate independent of them for counties and census divisions of Canada exclusive of cities and towns of 5,000 and over—Con.

County or Census Division	Crude Birth Rate, 1930-32	P.C. of Population, French, 1931	P.C. of Population, Roman Catholic, 1931	Correcting Factor[1] for French and Roman Catholic	Crude Birth Rate Independent of French and Roman Catholic
Division No. 9D, B.C.	26·4	1·8	5·2	1·025	25·8
Division No. 11, remaining parts, Alta.	26·6	10·0	29·6	1·143	23·3
Timiskaming, Ont.	26·7	21·1	37·2	1·208	22·1
Division No. 10, Alta.	26·7	1·7	38·1	1·149	23·2
Division No. 14, Sask.	26·8	7·1	22·0	1·106	24·2
Division No. 1, remaining parts, Alta.	26·8	1·7	19·6	1·079	24·8
Quebec, remaining parts, Que.	26·9	92·7	96·7	1·662	16·2
Division No. 17, Sask.	26·9	12·0	26·6	1·139	23·6
Northumberland, N.B.	27·0	25·0	54·6	1·286	21·0
Napierville, Que.	27·0	98·1	99·2	1·689	16·0
Drummond, remaining parts, Que.	27·1	92·2	93·8	1·650	16·4
Division No. 16, Alta.	27·2	5·1	23·5	1·105	24·6
Berthier, Que.	27·4	98·8	99·6	1·693	16·2
Division No. 9B, B.C.	27·7	1·1	37·5	1·144	24·2
Shefford, remaining parts, Que.	27·9	86·8	87·8	1·610	17·3
Verchères, Que.	28·1	95·6	97·2	1·674	16·8
Sudbury, remaining parts, Ont.	28·3	43·4	62·5	1·375	20·6
Russell, Ont.	28·7	79·2	82·0	1·564	18·4
Division No. 15, remaining parts, Sask.	28·7	10·6	42·3	1·193	24·1
Cochrane, remaining parts, Oat.	29·0	40·4	58·9	1·352	21·4
Victoria, N.B.	29·2	30·7	41·8	1·256	23·2
L'Assomption, Que.	29·2	96·4	97·7	1·678	17·4
Terrehonne, remaining parts, Que.	29·2	91·2	93·4	1·645	17·8
Montcalm, Que.	29·3	92·7	96·3	1·661	17·6
Division No. 2, Man.	29·5	13·5	18·8	1·114	26·5
St-Maurice, remaining parts, Que.	29·6	97·8	99·5	1·689	17·5
Lévis, remaining parts, Que.	29·9	97·3	99·0	1·686	17·7
Division No. 14, Alta.	30·3	13·4	39·3	1·191	25·4
Bagot, Que.	30·4	99·2	99·5	1·694	17·9
Hull, remaining parts, Que.	30·4	68·0	82·9	1·531	19·9
Nicolet, Que.	30·4	99·3	100·0	1·696	17·9
Richmond, Que.	30·6	78·6	82·0	1·562	19·6
Papineau, Que.	30·7	80·8	88·5	1·593	19·3
Yamaska, Que.	30·8	98·2	99·7	1·691	18·2
Kent, N.B.	31·0	77·3	83·7	1·564	19·8
Arthabaska, remaining parts, Que.	31·1	98·5	99·5	1·692	18·4
Mégantic, remaining parts, Que.	31·1	90·9	93·3	1·644	18·9
Division No. 15, Alta.	31·6	27·4	55·4	1·297	24·4
Joliette, remaining parts, Que.	31·8	97·6	99·0	1·687	18·9
Nipissing, remaining parts, Ont.	31·9	62·1	75·1	1·483	21·5
Maskinongé, Que.	32·0	98·8	99·7	1·693	18·9
Montmagny, Que.	32·0	99·2	99·7	1·695	18·9
Division No. 1, Man.	32·3	21·2	46·5	1·243	26·0
Kamouraska, Que.	32·4	99·4	99·9	1·696	19·1
Portneuf, Que.	32·7	96·6	98·7	1·683	19·4
L'Islet, Que.	32·9	99·3	99·4	1·694	19·4
Lotbinière, Que.	33·1	97·8	99·7	1·690	19·6
Champlain, remaining parts, Que.	33·2	97·3	99·3	1·687	19·7
Montmorency, Que.	33·2	97·9	99·0	1·688	19·7
Rimouski, remaiaing parts, Que.	33·5	97·4	99·9	1·690	19·8
Division No. 13, Alta.	33·5	26·3	56·9	1·299	25·8
Bellechasse, Que.	33·8	99·6	100·0	1·697	19·9
Division No. 18, Sask.	33·8	7·3	61·9	1·256	26·9
Bonaventure, Que.	33·9	74·7	82·8	1·552	21·8
Wolfe, Que.	34·2	95·2	95·5	1·666	20·5
Charlevoix, Que.	35·8	97·1	99·4	1·687	21·2
Madawaska, remaining parts, N.B.	36·6	96·1	99·1	1·682	21·8
Dorchester, Que.	36·7	96·0	99·2	1·682	21·8
Restigouche, remaining parts, N.B.	36·9	68·7	81·0	1·526	24·2
Beauce, Que.	37·1	99·0	99·7	1·694	21·9
Labelle, Que.	37·4	96·6	98·9	1·583	22·2
Gloucester, N.B.	37·5	83·2	92·6	1·616	23·2
Témiscouata, remaining parts, Que.	37·6	98·7	99·6	1·693	22·2
Frontenac, Que.	37·7	96·4	96·9	1·675	22·5
Gaspé, Que.	38·0	77·6	89·8	1·588	23·9
Saguenay, Que.[4]	38·2	79·2	94·1	1·609	23·7
Isles-de-la-Madeleine, Que.[4]	38·3	90·0	91·1	1·633	23·5
Division No. 17, Alta.	38·5	6·4	67·6	1·275	30·2
Temiskaming, Que.	39·2	72·4	87·3	1·562	25·1
Abitibi, Que.	39·3	88·7	93·0	1·636	24·0
Matane, Que.	41·5	97·5	99·1	1·687	24·6
Chicoutimi, remaining parts, Que.	43·6	94·3	97·5	1·671	26·1
Lac-St-Jean, Que.	45·1	96·3	98·8	1·682	26·8

APPENDICES

APPENDIX I

MISSTATEMENT OF AGE IN THE CANADIAN CENSUS

The aim of this appendix is to provide at least a limited approach to the problem of the extent of misstatement of age by the population enumerated in the Canadian census; to find whether the misstatement has decreased or increased since the early censuses; and to ascertain the effect of age and sex and rural or urban residence on the accuracy of reporting. The study was circumscribed in that, since the census is the only source of information on the ages of the entire population, testing was confined to comparing one census with another. Several samples were used and all the censuses from 1871 to 1936 were the material sampled.

The first of the several samples was obtained from the Old Age Pension search files. These record the ages of the applicants for Old Age Pensions and the ages of their parents, brothers and sisters as given in the censuses of 1871, 1881, 1891 and 1901. A total of 4,474 cases were found where reported ages could be compared as at two consecutive censuses. In addition to these 337 cases for these years were obtained where the ages could be matched over a 20-year interval, but not for a 10-year one.

The average number of years aged during the inter-censal period for males and females separately and the standard deviations of the distributions of "years aged" are shown below.

Age Group	Sample from Old Age Pension Search Files (10-year period), 1871, 1881, 1891 and 1901			
	Males		Females	
	Mean Difference in Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution
0- 9	9·81	0·89	9·81	1·01
10-19	9·62	1·40	9·38	1·55
20-29	9·62	2·28	9·54	2·57
30-39	10·10	2·76	10·05	2·76
40-49	10·35	3·35	9·38	3·06
50-59	10·04	2·88	10·56	2·50
60-69	9·38	2·04	10·42	2·44

It is seen that the standard deviation is smallest at the first 10-year age group (comprising persons who were 0-9 years of age according to the first of two consecutive censuses), standing at 0·89 years for males and 1·01 years for females. A gradual increase with age in the standard deviation brings them to a maximum for both males and females at 40-49, where the spread is measured by a standard deviation of more than three years for both sexes. Thus, at these ages, about one-third of the population gave ages at two consecutive censuses which differed by less than 7 or more than 13 years. Here, as elsewhere throughout this appendix, it may be seen that overstatements balance understatements to a very considerable degree and the average error is 0·35 years.

The 337 individuals who were traced between two censuses twenty years apart, but not found in the intervening census, are shown below. The numbers in each sex-age group were so small that the sexes have been combined.

Age Group	Sample from Old Age Pension Search Files (20-year period), 1871, 1881, 1891 and 1901	
	Mean Difference in Age	Standard Deviation of Distribution
0- 9	19·56	1·18
10-19	19·19	2·20
20-29	18·87	2·74
30-39	19·65	2·76
40-49	19·65	3·22
50-59	19·60	2·91

Though the sample is very small it is interesting to note that the result is essentially similar to that of the previous statement, the standard deviations proceeding to a maximum at 40-49 and declining somewhat at the very oldest age. As is to be expected from the longer span of years, the standard deviations are greater than those of the 10-year comparison and the means divcrge more widely from the true.

The above conclusions are based on information collected from censuses prior to 1911. For a comparison with the most recent period a sample was taken of those persons who could be traced through the censuses of 1931 and 1936. The search was conducted for one provinee only, Alberta being chosen for this purpose.

However, before proceeding with the province as a whole, it was considered advisable to test whethcr the results would differ greatly from one district to another. A total of 1,038 persons, including 577 males and 461 females, were collected from thc books of the urban district of Lethbridge and 1,059, including 585 males and 474 females, from the books of the largely rural district of Acadia.

Age Group	Sample from Lethbridge, Alta., 1931-36				Sample from Acadia, Alta., 1931-36			
	Males		Females		Males		Females	
	Mean Difference in Age	Standard Deviation of Distribution	Mean Differeace in Age	Standard Deviation of Distributioa	Mean Difference in Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution
0- 9	5·01	0·45	4·99	0·43	5·04	0·58	4·93	0·56
10-19	5·01	0·53	5·05	0·79	4·88	0·57	4·95	0·40
20-29	5·18	0·94	5·17	1·40	4·80	1·00	5·14	1·46
30-39	5·15	1·64	4·81	1·57	5·07	1·61	5·23	1·74
40-49	5·24	1·31	5·21	1·00	5·42	1·34	5·03	1·77
50-59	5·05	1·08	4·91	1·81	5·36	1·03	5·19	1·37
60-69	5·06	0·80	4·88	1·25	5·39	1·02	4·86	0·82

It was considered that the two districts were not too dissimilar to justify averaging for the whole province. About 700 names were then matched betwecn the two censuses (1931 and 1936) in each of the sixteen districts of Alberta, with the exception of Pcace River and Athabaska where some 400 only were matched. Subdistricts for search were chosen so that they were distributed fairly evenly throughout the main district.

In all, 11,196 cases wcre tabulated, of which 6,109 were males and 5,087 were females. This is a representative sample as regards the proportion of the sexes, since 0·01526 of the male population of Alberta in 1931 are included against 0·01535 of the female population. In regard to age distribution it seemed moderately similar to that of the population as a whole. The very early ages of life are somewhat over-represented and those from 15 to 35 slightly under-represented. From age 35 until the end of life the age distribution of the sample is very close to that of thc population as a whole. This can be easily explained. Children at home are easily traced from one census to anothcr, but in the late teens and twenties, when new families are being formed and new households organized, addresses change and the traeing is very diffieult. After age 40 people are more likely to have a fixed abode. (It may be said generally that the ages of greatest population movement are 20-40.)

The sample is displayed by singlc years of age in the scatter diagram, pages 396-398.

Following is a summary in terms of mean increase in reported age between the two censuses and the standard deviation of the increases as reported.

Age Group	Sample from the Province of Alberta, 1931-36			
	Males		Females	
	Mean Difference ia Age	Standard Deviation of Distribution	Mean Differeace in Age	Standard Deviatioa of Distributioa
0- 9	4·96	0·58	4·99	0·59
10-19	4·92	0·72	4·94	0·67
20-29	5·00	1·17	5·14	1·28
30-39	5·13	1·49	5·04	1·71
40-49	5·18	1·48	5·02	1·57
50-59	5·06	1·56	5·03	1·65
60-69	5·08	1·63	4·97	1·88
70-79	4·92	1·34	4·96	1·32

COMPARISON BETWEEN AGES AS STATED IN 1931 AND 1936 FOR A SAMPLE OF 11,196 PERSONS TAKEN FROM THE PROVINCE OF ALBERTA

	Age as Stated in 1931	Age as Stated in 1936																								
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	0-1	2	252	25	2		1																				
2	1		26	225	14	2					1																
3	2			30	213	25		2																			
4	3		1	1	38	242	32	2			1																
5	4	1			4	35	229	29		1																	
6	5				1	3	35	259	15	1		2															
7	6			1			1	38	228	25	3	2															
8	7						2	5	33	231	25	1															
9	8							1	3	33	272	25	1		1												
10	9					1			2	6	33	257	20	2													
11	10				1					1	4	37	266	34	1	1			1								
12	11									1		5	24	237	26		1										
13	12										1	3	6	36	230	31											
14	13												2	2	24	203	24		1								
15	14												1	2	2	29	203	20									
16	15														1	6	19	158	14	1							
17	16																3	17	138	14	1						
18	17																	1	19	113	10	2	1				
19	18																	1	3	26	99	15	2				
20	19											1						1		6	22	79	9				
21	20																			2	2	22	84	14	5	2	2
22	21																				1	7	20	75	13	1	1
23	22														1							2	5	23	75	18	1
24	23																						3	6	21	76	20
25	24																						1		3	20	79
26	25																							1	1	13	11
27	26																										2
28	27																									2	2
29	28																									1	
30	29																										
31	30																							1			1
32	31																								1		1
33	32																										
34	33																								1		
35	34																										
36	35																										
37	36																										
38	37																										
39	38																										
40	39																										
41	40																										
42	41																										
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66	65																										
67	66																										
68	67																										
69	68																										
70	69																										
71	70																										
72	71																										
73	72																										
74	73																										
75	74																										
76	75																										
77	76																										
78	77																										
79	78																										
80	79																										
81	80 and over																										
82	Total	3	279	282	273	308	300	336	281	299	340	333	320	313	286	270	250	198	176	162	135	127	125	120	120	133	120

COMPARISON BETWEEN AGES AS STATED IN 1931 AND 1936 FOR A SAMPLE OF 11,196 PERSONS TAKEN FROM THE PROVINCE OF ALBERTA

Age as Stated in 1936

30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	
																														1
																														2
																														3
																														4
																														5
																														6
																														7
																														8
																														9
																														10
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																														15
																														16
																														17
																														18
																														19
1																														20
				1																										21
																														22
	1		1																											23
4	1	2			1																									24
22	2	1	2																											25
93	19	1	2	1						1																				26
21	62	15	4	1	2			2																						27
5	14	74	19	4	1	1																								28
2	3	25	82	38	9	3		2			1		1																	29
		1	22	77	26	3	1	4	1																					30
		2	6	9	96	24	9	2		2		1																		31
			1	4	10	98	32	5	1	1	1																			32
				1	6	12	69	21	3	2	1		1		1															33
				1	1	5	21	71	13	6	3			1	1				1											34
				1	2	1	5	21	74	21	5	5			1															35
				1	2		3	5	24	105	21	8	3	2	1	1		1	1		1								36
		1				1	3	2	8	30	89	36	4	1	2	1							1							37
	1					1	2	2	2	8	19	80	16	4	5		1	1												38
							1	2	2	2	2	30	90	28	5	3	3	5	1	1	2			1						39
												11	26	81	16	5	5													40
						1	1			1		2	4	24	95	22	14	9	2	1	1	2		1						41
										1		2		3	16	93	19	4	2	1	1	1	1							42
										1				1	6	6	89	39	10	5	3	1	1							43
															6	24	18	98	27	3	2	1	1							44
														1	1	4	6	24	71	23	4	3	1		1		1			45
															1	2	1	5	25	87	27	9	3	2	2				2	46
																1	3	4	5	22	84	27	3	1	1		1			47
																			3	10	25	78	17	7	1	1				48
																1	2		1	5	3	18	73	16	9	1	1	2		49
																				1	2	12	22	70	33	1	3	4	2	50
															1					1		3	6	14	81	30	4	6	1	51
																							1	6	19	65	13	10	2	52
																				3	1		2	3	6	16	82	24	6	53
																									4	6	18	57	16	54
																				1		1	2			1	1	13	57	55
																		1			1					1	1	3	5	56
																										1	2	1	3	57
																											1	2		58
																														59
																				1								1	1	60
																														61
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																														81
148	103	122	139	138	156	150	147	137	128	182	142	175	145	146	158	168	162	188	148	164	155	158	133	120	157	124	128	125	95	82

COMPARISON BETWEEN AGES AS STATED IN 1931 AND 1936 FOR A SAMPLE OF 11,196 PERSONS TAKEN FROM THE PROVINCE OF ALBERTA—*Con.*

	Age as Stated in 1931	Age as Stated in 1936																									
		60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85 and over	Total
1	0-1																											282
2	1																											268
3	2																											270
4	3																											317
5	4																											299
6	5																											316
7	6																											298
8	7																											297
9	8																											336
10	9																											321
11	10																											346
12	11																											294
13	12																											307
14	13																											256
15	14																											257
16	15																											199
17	16																											173
18	17																											146
19	18																											146
20	19																											119
21	20																											134
22	21																											118
23	22																											127
24	23																											134
25	24																											130
26	25																											143
27	26																											109
28	27																											122
29	28																											167
30	29																											135
31	30																											153
32	31																											155
33	32																											117
34	33																											125
35	34																											135
36	35																											179
37	36																											180
38	37																											140
39	38																											171
40	39																											148
41	40																											180
42	41																											142
43	42																											180
44	43																											168
45	44																											140
46	45																											166
47	46			2																								154
48	47																											142
49	48		1																									133
50	49																											150
51	50	3				1																						151
52	51	1																										117
53	52	5																										148
54	53	6		2	1																							110
55	54	14	4	2	2																							98
56	55	46	5	8	1	2	2	1																				76
57	56	12	39	26	6	3																						94
58	57	9	3	37	15	2	2			1																		72
59	58	1	3	5	41	13	3	1		1																		69
60	59			2	12	35	4	3	1	1	3																	61
61	60	1		1	3	9	49	10	3	3	1	1																82
62	61						11	34	7	2										1								57
63	62					1		7	22	7	2	3																42
64	63							2	7	17	7	1		1														35
65	64								1	9	32	10	1	1		1												55
66	65		1							2	3	21	7		1													35
67	66							2			3	6	12	11	4	1	1											40
68	67										1	2	7	16	4	1												31
69	68												1	4	13	2								2				22
70	69													1	4	17	3											25
71	70													1	1	3	14	5	2									26
72	71														1		5	14	1	1	1							23
73	72																2	3	10	5	1							21
74	73																		1	12	3							16
75	74												1				1		1	3	3		3					12
76	75																			2	1	5	2					10
77	76																			1		1	7	3				12
78	77																					2	1	2	2	2		4
79	78																								1	2	1	9
80	79																							1		2		3
81	80 and over																								1		15	16
82	Total	98	56	85	81	66	71	60	41	43	52	44	29	35	28	25	26	22	15	25	9	8	13	8	4	6	16	11,196

In a few eases children of 5, 6 and 7 years were found in the 1936 Census and not reeorded in 1931. Omissions of this type cneountered in the sample deseribed above numbered 14 males of age 5 in 1936, 2 of age 6 and 1 of age 7; 9 females of age 5 and 2 of age 6.

Partly to determine the importanee of the part played by the length of the inter-eensal period, two samples of data from the 1921 and 1931 Censuses were then taken. The first was from Kings County, N.S., where the population is largely rural and contained 580 males and 489 females. The seeond was from the City of Westmount, Que., and eontained 488 males and 580 females.

Age Group	Sample from Kings County, N.S., 1921-31				Sample from Westmount, Que., 1921-31			
	Males		Females		Males		Females	
	Mean Difference in Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution
0- 9	9·92	0·71	9·99	0·48	9·98	0·46	9·96	0·46
10-19	9·83	0·71	9·83	0·58	9·74	1·40	9·84	1·02
20-29	9·99	1·17	9·90	1·53	9·66	2·18	9·23	2·93
30-39	9·76	1·47	9·78	1·83	9·50	1·19	9·72	2·76
40-49	9·57	1·71	10·19	1·92	10·29	2·24	9·64	3·37
50-59	10·13	1·81	10·44	2·26	10·48	2·93	10·03	2·77
60-69	10·07	1·93	9·50	1·86	10·15	1·35	9·68	2·89

Both of these places show higher standard deviations over the 10-year period than Alberta in 1931-36 and, also, the urban was decidcly higher than the rural. It was thought of interest to compare Alberta 1931-36 with another urban sample for those years in order to discover if the high deviation were an urban eharaeteristie. Therefore, the cases already eolleeted from Calgary were tabulated separately and the deviations ealeulatcd. There were 547 males and 532 females in this samplc. It is seen that the following results follow closely those given for the province of Alberta as a whole.

Age Group	Sample from Calgary, Alta., 1931-36			
	Males		Females	
	Mean Difference In Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution
0- 9	4·95	0·48	4·92	0·30
10-19	4·83	0·68	4·89	0·56
20-29	5·11	1·47	5·09	1·05
30-39	5·34	1·08	5·20	1·72
40-49	5·23	1·61	4·84	2·02
50-59	5·45	1·63	4·96	1·96
60-69	5·06	1·85	5·33	2·34

As a check on the representativeness of the Old Age Pension files two samples were colleeted directly from thc census schedulcs. The first was from the 1871 and 1881 censuses of Bothwell, Ont. (624 males and 458 femalcs), the seeond from the 1881 and 1891 censuses of Huntingdon, Que. (575 males and 508 females). The standard deviations are deeidedly lower than for the Old Age Pensioncrs, particularly for males indicating that the Old Age Pensioners are not a representative group for this purpose.

Age Group	Sample from Bothwell, Ont., 1871-81				Sample from Huntingdon, Que., 1881-91			
	Males		Females		Males		Females	
	Mean Difference in Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution	Mean Difference in Age	Standard Deviation of Distribution
0- 9	9·97	0·63	10·05	0·71	9·87	0·62	9·96	0·60
10-19	9·81	1·00	9·37	1·38	9·63	0·99	9·55	1·63
20-29	10·00	1·33	9·56	1·86	9·80	1·94	9·68	1·55
30-39	10·00	2·45	9·70	1·53	10·04	1·45	9·35	2·22
40-49	10·03	1·59	9·46	2·29	10·03	1·14	10·05	2·05
50-59	9·56	1·90	10·24	2·63	10·30	1·85	10·10	2·66
60-69	10·42	2·25	-	-	9·96	2·62	9·67	3·35

The standard deviation for "all ages" is a convenient means of comparing the results from the different samples. However, the proportion of young children is much greater in some samples than in others and this would tend to decrease the standard deviation for "all ages." Therefore, it was necessary to standardize the standard deviations in order to eliminate the effect of age distribution.

The standardization was effected by the following process: the sum of the products of the squares of the deviations and total male or female population of each age was divided by the total population of the sample. This result gives the square of a standardized standard deviation.

Sample	Standardized Standard Deviation	
	Males	Females
Bothwell, Ont., 1871-81	1·38	1·53
Huntingdon, Que., 1881-91	1·39	1·81
Old Age Pension Search Files, 1871-1901 (10-year period)	1·89	1·93
Old Age Pension Search Files, 1871-1901 (20-year period)	2·22 (both sexes)	
Kings County, N.S., 1921-31	1·32	1·49
Westmount, Que., 1921-31	1·84	2·39
Province of Alberta, 1931-36	1·11	1·23

APPENDIX II

TREND OF THE BIRTH RATE IN THE PRAIRIE PROVINCES, 1921-1936

Introduction.—The facts that a census of the three Prairie Provinces, Manitoba, Saskatchewan and Alberta, is taken at five-year intervals instead of ten-year, and that census compilations for 1926 and 1936 have been made in detail by sex, age and conjugal condition, allow an analysis of the change in the crude birth rate not merely as between the two census periods of 1921 and 1931 but for the four census periods 1921, 1926, 1931 and 1936. In this connection it was thought well to consider these provinces as a group, not individually.

Trend in Rates of Birth, Death and Natural Increase.—Statement A gives the live births of each province over the period 1921-36 and contains also the annual totals for the three provinces combined. As was seen in considering the births in the Registration Area, the trend over the period, with the exception of the years 1927-30, was definitely downward. During the short period 1927-30 the births showed moderate increases. These were most noticeable in the province of Alberta.

A.—NUMBER OF LIVE BIRTHS, PRAIRIE PROVINCES, 1921-1936

Year	Prairie Provinces	Manitoba	Saskatchewan	Alberta
1921	57,532	18,478	22,493	16,561
1922	56,181	17,679	22,339	16,163
1923	52,479	16,472	20,947	15,060
1924	51,590	15,454	21,539	14,597
1925	50,373	14,867	20,582	14,924
1926	49,833	14,661	20,716	14,456
1927	50,059	14,147	21,015	14,897
1928	51,457	14,504	21,261	15,692
1929	52,606	14,236	21,446	16,924
1930	54,111	14,411	22,051	17,649
1931	52,959	14,376	21,331	17,252
1932	51,928	14,124	20,814	16,990
1933	49,572	13,304	20,145	16,123
1034	49,310	13,310	19,764	16,236
1935	49,087	13,335	19,569	16,183
1936	47,766	12,855	19,125	15,786

Statement B shows the birth rates corresponding to the absolute figures of Statement A. It will be observed that for the Prairie Provinces as a group, the rate fell from 29·4 in 1921 to 23·6 in 1927, and between 1927 and 1930 showed a tendency to stabilize itself at about this latter level. As in the case of the Registration Area, a new decline commenced with 1931 and the rate dropped steadily year by year until it reached the level of 19·8 per thousand in 1936—a fall in fifteen years of about 10 births per thousand population.

B.—CRUDE BIRTH RATES[1], PRAIRIE PROVINCES, 1921-1936

Year	Prairie Provinces	Manitoba	Saskatchewan	Alberta
1921	29·4	30·3	29·7	28·1
1922	28·4	28·7	29·0	27·3
1923	26·4	26·6	26·9	25·4
1924	25·6	24·7	27·2	24·5
1925	24·7	23·5	25·5	24·8
1926	24·1	22·9	25·2	23·8
1927	23·6	21·7	25·0	23·5
1928	23·6	21·8	24·7	23·8
1029	23·4	21·0	24·3	24·7
1930	23·5	20·9	24·4	24·9
1931	22·5	20·5	23·1	23·6
1032	21·8	19·9	22·3	23·0
1933	20·7	18·7	21·6	21·6
1934	20·6	18·7	21·2	21·5
1935	20·4	18·8	21·0	21·2
1936	19·8	18·1	20·5	20·4

[1]Rates per 1,000 population.

Throughout the period the death rate of this group of provinces, always low, owing partly to the age composition of the population and partly to other factors, was highest in 1922, when it stood at 8·7, and lowest in 1934, when it fell to 6·8. In the initial year, 1921, the rate was 8·1 and in 1936 it was 7·7. These rates are shown in Statement C below.

C.—DEATH RATES[1], PRAIRIE PROVINCES, 1921-1936

Year	Prairie Provinces	Manitoba	Saskatchewan	Alberta
1921	8·1	8·8	7·4	8·4
1922	8·7	9·3	8·0	8·9
1923	8·3	8·6	7·9	8·4
1924	7·8	8·0	7·3	8·1
1925	7·6	8·3	7·0	7·8
1926	8·0	8·3	7·4	8·5
1927	7·7	8·2	7·2	8·0
1928	7·9	8·1	7·2	8·7
1929	8·4	8·6	7·6	9·1
1930	7·6	8·3	7·0	7·8
1931	7·1	7·6	6·6	7·2
1932	7·1	7·5	6·5	7·5
1933	7·0	7·7	6·5	7·1
1934	6·8	7·3	6·4	7·1
1935	7·3	8·1	6·6	7·5
1936	7·7	8·7	6·8	8·0

[1]Rates per 1,000 population.

As a result of the large decline in the birth rate and the comparatively small and irregular movement of the death rate, the rate of natural increase for the Prairie Provinces showed a decline in every year throughout the period with the exceptions of 1930 and 1934. At the beginning of the period the rate was 21·3; for 1936 it was 12·1. The rates of natural increase are shown in Statement D for the period 1921-36.

D.—RATES[1] OF NATURAL INCREASE, PRAIRIE PROVINCES, 1921-1936

Year	Prairie Provinces	Manitoba	Saskatchewan	Alberta
1921	21·3	21·5	22·3	19·7
1922	19·7	19·4	21·1	18·4
1923	18·1	18·0	19·0	1·70
1924	17·8	16·7	19·9	16·4
1925	17·1	15·2	18·5	17·0
1926	16·1	14·6	17·8	15·3
1927	15·9	13·5	17·8	15·5
1928	15·7	13·7	17·5	15·1
1929	15·0	12·4	16·7	15·6
1930	15·9	12·6	17·4	17·1
1931	15·4	12·9	16·5	16·4
1932	14·7	12·4	15·8	15·5
1933	13·7	11·0	15·1	14·5
1934	13·8	11·4	14·8	14·4
1935	13·1	10·7	14·4	13·7
1936	12·1	9·4	13·7	12·4

[1]Rates per 1,000 population.

Specific Fertility Rates of All Women.—Statement E shows the specific fertility rates of women of all conjugal conditions for the four individual census years, 1921, 1926, 1931 and 1936. Considering the provinces as a group, it will be noted that each census year showed a lower fertility rate than the previous, not only for the group of women of child-bearing ages considered as a whole but for each five-year period within these limits. The decline was smallest between 1926 and 1931. Between 1921 and 1926 and again between 1931 and 1936 the movement was quite pronounced.

E.—SPECIFIC FERTILITY RATES[1] OF WOMEN 15-49 YEARS OF AGE (ALL CONJUGAL CONDITIONS), BY AGE GROUP, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936

Province and Age Group	1921[2]	1926	1931	1936
Prairie Provinces—				
15-49 years	128·3	103·4	93·5	79·5
15-19 years	45·0	32·6	30·5	24·2
20-24 "	197·0	161·9	149·3	117·4
25-29 "	209·2	189·8	179·7	148·1
30-34 "	173·7	156·2	142·0	126·2
35-39 "	129·6	109·5	98·6	86·1
40-44 "	60·3	51·1	41·8	36·5
45-49 "	10·7	7·2	5·4	4·2
Manitoba—				
15-49 years	125·2	92·5	80·7	68·9
15-19 years	41·7	28·2	25·7	20·5
20-24 "	184·4	134·8	121·9	99·1
25-29 "	211·5	171·4	157·5	128·3
30-34 "	170·5	144·6	128·3	111·1
35-39 "	132·4	103·8	87·3	74·1
40-44 "	58·5	45·5	37·6	30·2
45-49 "	11·0	6·4	4·7	3·7
Saskatchewan—				
15-49 years	135·2	113·2	99·5	84·5
15-19 years	45·5	33·2	30·2	24·0
20-24 "	211·5	175·7	160·0	122·1
25-29 "	214·0	206·3	190·4	158·1
30-34 "	182·6	173·9	152·7	139·6
35-39 "	135·6	122·2	109·7	99·0
40-44 "	64·3	57·2	46·3	42·6
45-49 "	11·1	7·6	6·3	4·6
Alberta—				
15-49 years	119·5	103·1	99·3	84·1
15-19 years	47·2	36·9	35·7	28·0
20-24 "	187·2	175·4	164·4	130·3
25-29 "	194·3	189·1	188·9	156·3
30-34 "	161·0	146·5	142·6	125·7
35-39 "	115·6	99·7	96·9	83·0
40-44 "	55·8	49·5	40·6	36·0
45-49 "	9·6	7·6	4·9	4·3

[1]Rates per 1,000 women of age specified.
[2]Rates for Alberta are for 1922.

Standardized Birth Rates.—Standardized rates were computed for the Prairie Provinces (method explained in Chapter II, page 246) by applying the above specific fertility rates of all women to the corresponding age group of the female population of Canada, 1931, and interpolating for the intervening years. Statement F gives the standardized birth rates of Manitoba, Saskatchewan and Alberta and for the three provinces as a group.

F.—STANDARDIZED BIRTH RATES[1], PRAIRIE PROVINCES, 1921-1936

Year	Prairie Provinces	Manitoba	Saskatchewan	Alberta
1921	30·1	29·5	31·6	-
1922	29·1	27·9	30·9	28·3
1923	27·4	26·2	29·1	26·7
1924	26·9	24·5	29·8	26·0
1925	26·3	23·5	28·4	26·9
1926	25·7	22·9	28·1	25·8
1927	25·2	21·8	27·9	25·6
1928	25·0	21·8	27·3	25·6
1929	24·8	21·0	26·8	26·3
1930	24·7	20·8	26·7	26·1
1931	23·6	20·4	25·3	24·8
1932	22·9	19·8	24·4	24·1
1933	21·3	18·2	23·2	22·3
1934	20·9	17·9	22·4	22·0
1935	20·3	17·6	21·7	21·3
1936	19·7	16·9	21·3	20·6

[1]Per 1,000.

Standardization (which eliminates the influences of differences in the age composition of females in the child-bearing age groups) increased the fall in the birth rate over the period. This decline is now, in the Prairie Provinces as a whole, 10·4 births per thousand in the standardized rates and 9·6 births per thousand in the crude rates. Further, we observe that in 1921 the

standardized rate was 30·1 as against a crude rate of 29·4. Standardization having been effected on the basis of the population of all Canada in 1931, this indicates that the Prairie Provinces as a whole had, in 1921, a population more unfavourably composed by sex and age for a high birth rate than had the country as a whole ten years later.

In 1926 the standardized rate was 25·7 as against a crude rate of 24·1. The absolute and percentage differences were, therefore, greater than in 1921 and indicated that the population of these provinces in 1926 was less favourable to a high birth rate than in the earlier year.

In 1931 a standardized rate of 23·6 as against a crude rate of 22·5 indicated a diminishing difference as compared with 1926 and, therefore, a more favourably constituted population.

In 1936 the standardized rate was 19·7 and the crude rate 19·8. At this period, therefore, the composition of the population had become still more favourable to a high birth rate than in 1931 and practically corresponded with that of Canada as a whole in 1931.

Factors Affecting the Crude Birth Rate.—Factors A-E affecting the Canadian birth rate, summarized on page 260 of Chapter II, will now be discussed in connection with the Prairie Provinces.

Factor A, the proportion of women of child-bearing ages to the total population, was increasing with each census both in the three provinces as a group and in each province individually. The change between 1921 and 1936 was most noticeable in Saskatchewan where the proportion improved by more than 10 p.c. In the Prairie Provinces as a whole there was an improvement of over 8 p.c. Thus, had every other factor which affects the crude birth rate remained constant, this change in proportion should have increased the rate for the Prairie Provinces by about 8·5 p.c. during the period 1921-36. Statement G shows the percentage proportion of women 15-49 years of age to the total population for the years 1921, 1926, 1931 and 1936.

G.—PERCENTAGE PROPORTION OF WOMEN 15-49 YEARS OF AGE TO TOTAL POPULATION, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936

Province	1921	1926	1931	1936
Prairie Provinces	22·9	23·3	24·1	24·9
Manitoba	24·2	24·8	25·4	26·2
Saskatchewan	22·0	22·3	23·2	24·3
Alberta	22·9	23·1	23·7	24·3

The effect of factor B, the change in the proportion of married women to all women within the child-bearing ages, is in sharp contrast to that of factor A. In relation to this factor each census shows a more unfavourable condition than the preceding one and between 1921 and 1936 the proportion of married women to all women between the ages of 15 and 50 years had declined by about 15 p.c. Statement H shows the percentage proportion of married women 15-49 years of age to all women by age group for the years 1921, 1926, 1931 and 1936.

H.—PERCENTAGE PROPORTION OF MARRIED WOMEN 15-49 YEARS OF AGE TO ALL WOMEN, BY AGE GROUP, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936

Province and Age Group	1921	1926	1931	1936
Prairie Provinces—				
15-49 years	67·2	62·9	60·2	57·0
15-19 years	9·7	6·4	5·8	4·8
20-24 "	53·9	44·8	42·6	36·2
25-29 "	79·2	76·9	74·9	69·0
30-34 "	87·5	87·1	86·5	83·7
35-39 "	89·5	89·7	89·3	88·0
40-44 "	88·8	88·9	89·3	88·7
45-49 "	87·1	87·2	87·5	87·4
Manitoba—				
15-49 years	62·8	58·5	56·3	54·1
15-19 years	8·0	5·0	4·8	4·0
20-24 "	46·6	37·2	35·0	31·4
25-29 "	73·6	70·2	68·0	62·0
30-34 "	83·4	82·8	81·8	78·6
35-39 "	85·9	86·3	85·7	84·1
40-44 "	85·9	85·1	86·5	85·5
45-49 "	85·4	84·6	84·1	84·5

H.—PERCENTAGE PROPORTION OF MARRIED WOMEN 15-49 YEARS OF AGE TO ALL WOMEN, BY AGE GROUP, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936—Con.

Province and Age Group	1921	1926	1931	1936
Saskatchewan—				
15-49 years	69·3	64·8	61·1	56·9
15-19 years	10·6	7·0	5·9	4·6
20-24 "	58·2	48·5	45·1	37·1
25-29 "	82·5	80·7	77·6	70·9
30-34 "	90·0	89·7	88·8	85·7
35-39 "	91·7	91·9	91·6	90·1
40-44 "	90·8	91·5	91·2	90·8
45-49 "	88·8	89·1	89·9	89·4
Alberta—				
15-49 years	69·2	65·4	63·1	60·0
15-19 years	10·5	7·3	6·8	5·7
20-24 "	56·8	48·8	47·4	40·1
25-29 "	81·5	79·5	78·7	73·9
30-34 "	88·5	88·4	88·4	86·4
35-39 "	90·7	90·6	90·1	89·4
40-44 "	89·4	89·9	90·0	89·4
45-49 "	87·0	87·7	88·2	87·9

Statement I shows factor C, the percentage distribution of married women, 15-49 years of age, by age groups for the years 1921, 1926, 1931 and 1936, for the Prairie Provinces as a group and individually. Considering them as a group, declines over the fifteen-year period are shown in the proportion of married women in the age groups under 40 and increases in the age groups over 40. That is to say, the age distribution in 1936 was less favourable to a high fertility rate than was the distribution of 1921, as a smaller proportion of the married women were in the age groups of high fertility and a greater proportion in the age groups of low fertility.

Among the five-year periods the greatest changes appear between 1921 and 1926. In 1926 the proportion in the age group 15-19 had fallen 19 p.c., the groups 20-24 and 25-29 had each dropped 12 p.c. and the proportion in the two oldest groups had increased 14 and 25 p.c., respectively. Between 1926 and 1931 the changes were not as pronounced and were in some cases of an opposite trend. During this period the proportion of married women in the 15-19 group did not change; in the age group 20-24 it increased 11 p.c. and in the age group 25-29 it increased 1 p.c. While it still decreased in the age group 30-34, it also decreased in the age group 35-39. The two higher age groups showed smaller increases, 2 p.c. for the 40-44 group and 12 p.c. for the oldest. Between the years 1931 and 1936, the proportion of married women increased in two of the groups, 5 p.c. in 25-29 group and 8 p.c. in the 45-49 group. The greatest decrease, 14 p.c., took place in the youngest group and the decreases in the other groups were small—all under 5 p.c. Thus the census years, arranged in order of favourability of the distribution of married women to a high birth rate, would be 1921, 1931, 1926 and 1936.

I.—PERCENTAGE DISTRIBUTION OF MARRIED WOMEN 15-49 YEARS OF AGE, BY AGE GROUP, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936

Province and Age Group	1921	1926	1931	1936
Prairie Provinces—				
15-49 years	100·0	100·0	100·0	100·0
15-19 years	2·6	2·1	2·1	1·8
20-24 "	12·9	11·3	12·5	12·2
25-29 "	19·6	17·2	17·4	18·3
30-34 "	20·6	19·3	17·8	17·7
35-39 "	19·4	20·3	18·5	17·7
40-44 "	14·7	16·8	17·1	16·6
45-49 "	10·3	12·9	14·5	15·7
Manitoba—				
15-49 years	100·0	100·0	100·0	100·0
15-19 years	2·3	1·8	1·8	1·5
20-24 "	12·0	10·3	11·1	11·3
25-29 "	19·5	16·9	16·8	17·7
30-34 "	20·4	19·7	17·7	17·6
35-39 "	19·5	20·6	19·3	17·9
40-44 "	15·0	17·3	17·9	17·4
45-49 "	11·2	13·4	15·4	16·6

I.—PERCENTAGE DISTRIBUTION OF MARRIED WOMEN 15-49 YEARS OF AGE, BY AGE GROUP, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936—Con.

Province and Age Group	1921	1926	1931	1936
Saskatchewan—				
15-49 years	100·0	100·0	100·0	100·0
15-19 years	2·8	2·3	2·2	1·9
20-24 "	13·6	11·9	13·1	12·6
25-29 "	19·9	17·7	17·5	18·4
30-34 "	20·7	19·3	17·8	17·4
35-39 "	19·3	20·1	18·4	17·6
40-44 "	14·2	16·4	16·8	16·5
45-49 "	9·6	12·4	14·2	15·7
Alberta—				
15-49 years	100·0	100·0	100·0	100·0
15-19 years	2·6	2·2	2·3	2·0
20-24 "	12·9	11·6	13·2	12·5
25-29 "	19·2	17·0	18·0	18·8
30-34 "	20·5	19·0	18·0	18·1
35-39 "	19·4	20·3	17·9	17·6
40-44 "	14·9	17·0	16·5	16·0
45-49 "	10·4	12·9	14·2	15·0

Statement J gives the specific fertility rates of the married women of child-bearing ages for the four census years (factor D). Considering the provinces as a group it will be observed that each census year shows a lower fertility rate than the preceding one, not only for the whole group of women of child-bearing ages but also for each five-year age group, with the exception of the group 15-19 years, which moves irregularly. It has already been remarked (Chapter II, page 245) that the fertility within marriage of this age group has not the same significance as that of other age groups.

J.—SPECIFIC FERTILITY RATES[1] OF MARRIED WOMEN 15-49 YEARS OF AGE, BY AGE GROUP, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936

Province and Age Group	1921[2]	1926	1931	1936
Prairie Provinces—				
15-49 years	187·8	160·3	150·2	134·3
15-19 years	418·1	433·4	434·6	417·2
20-24 "	356·9	348·1	333·1	307·0
25-29 "	261·9	243·9	236·1	210·1
30-34 "	197·3	178·0	162·6	149·0
35-39 "	143·9	121·2	109·4	96·2
40-44 "	67·6	57·0	46·4	40·7
45-49 "	12·2	8·2	6·1	4·7
Manitoba—				
15-49 years	194·7	153·0	138·4	122·6
15-19 years	456·1	452·5	424·0	416·9
20-24 "	381·6	344·7	330·0	298·1
25-29 "	284·1	240·7	228·7	202·6
30-34 "	202·7	173·0	155·5	140·0
35-39 "	153·2	119·5	100·7	86·8
40-44 "	67·5	53·0	43·2	34·4
45-49 "	12·7	7·5	5·6	4·4
Saskatchewan—				
15-49 years	192·8	171·4	158·0	143·0
15-19 years	394·9	421·8	437·2	428·2
20-24 "	359·4	353·4	339·1	311·3
25-29 "	258·2	253·0	241·8	218·5
30-34 "	201·6	192·5	170·6	161·5
35-39 "	147·3	132·2	118·9	108·1
40-44 "	70·5	62·3	50·4	46·6
45-49 "	12·5	8·4	6·9	5·1
Alberta—				
15-49 years	170·3	153·2	151·6	134·8
15-19 years	402·8	433·6	439·3	405·5
20-24 "	320·3	344·3	328·3	309·1
25-29 "	236·4	234·7	235·7	207·0
30-34 "	180·7	164·2	159·3	143·1
35-39 "	126·4	108·8	106·1	91·2
40-44 "	62·2	54·7	44·6	39·8
45-49 "	11·0	8·7	5·5	4·5

[1]Rates per 1,000 married women of age specified.
[2]Rates for Alberta are for 1922.

There has been a steady increase in the proportion of illegitimate births to total births (factor E) in the Prairie Provinces as a group and in each individual province. The greatest increase was in Saskatchewan, where in 1921 they formed 1·1 p.c. of total births and in 1936, 3·7 p.c. For the Prairie Provinces as a group the percentage was 1·7 in 1921 and 3·8 in 1936. As already stated in connection with the analysis for the Registration Area, the increase in the illegitimate births may be affected by better registration of such births and the proportion is also slightly affected by the decline in legitimate births over the period. Statement K shows the yearly proportions of the illegitimate births to the total births for the Prairie Provinces over the period 1921-36.

K.—PERCENTAGE ILLEGITIMATE BIRTHS FORM OF TOTAL BIRTHS, PRAIRIE PROVINCES, 1921-1936

Year	Prairie Provinces	Manitoba	Saskatchewan	Alberta
1921	1·7	2·3	1·1	1·8
1922	1·7	2·3	1·2	1·9
1923	1·8	2·3	1·3	2·0
1924	2·0	2·7	1·5	2·0
1925	2·2	2·7	1·7	2·6
1926	2·5	3·2	1·9	2·8
1927	2·6	3·3	2·1	2·8
1928	2·8	3·5	2·2	3·0
1929	3·0	3·6	2·5	3·2
1930	3·2	3·7	2·8	3·2
1931	3·4	3·6	3·0	3·7
1932	3·4	3·6	3·1	3·6
1933	3·6	3·8	3·2	3·9
1934	3·6	3·8	3·4	3·6
1935	3·5	3·5	3·3	3·8
1936	3·8	3·8	3·7	3·8

Combined Effect of Factors Affecting Crude Birth Rates.—In order to effect an analysis of the change in the crude birth rate between successive census years on a similar basis to that which was made for the Registration Area in Statement XXX, page 261, we have first of all made computations which will show the extent to which the total fertility rate of all married women of child-bearing ages depends on the specific fertility rates of such women in five-year age groups and how much it depends on their age distribution. These preliminary computations are contained in Statement L. The figures in this statement have been carried to three decimal places as these figures were to be used in further computations.

Thus, the total fertility rate of married women of child-bearing ages in 1921 was 187·8 for the group (three provinces). In 1926 it was 160·3 but this decline was partly offeeted by changes in the specific fertility rates and partly by changes in the age distribution of the married women of child-bearing ages. The two intermediate figures between those quoted above indicate, respectively, what the total fertility rate would have been with the age distribution of 1921 and the specific rates of 1926 and what it would have been with the age distribution of 1926 and the specific rates of 1921.

L.—TOTAL FERTILITY RATES[1] FOR THE CHILD-BEARING AGES, PRAIRIE PROVINCES, 1921, 1926, 1931 AND 1936

Item	Prairie Provinces	Manitoba	Saskatchewan	Alberta
Age distribution of 1921 and specific fertility rates of 1921	187·816	194·714	192·780	170·346
Age distribution of 1921 and specific fertility rates of 1926	173·389	166·103	185·238	164·577
Age distribution of 1926 and specific fertility rates of 1921	174·375	180·408	179·176	158·189
Age distribution of 1926 and specific fertility rates of 1926	160·272	153·047	171·416	153·172
Age distribution of 1926 and specific fertility rates of 1931	149·520	139·888	159·163	147·947
Age distribution of 1931 and specific fertility rates of 1926	160·104	151·182	170·103	156·960
Age distribution of 1931 and specific fertility rates of 1931	150·163	138·357	157·955	151·643
Age distribution of 1931 and specific fertility rates of 1936	135·644	123·003	145·621	136·681
Age distribution of 1936 and specific fertility rates of 1931	148·445	137·984	155·545	149·638
Age distribution of 1936 and specific fertility rates of 1936	134·303	122·587	143·026	134·819
Age distribution of 1936 and specific fertility rates of 1921	172·522	177·209	174·891	159·090
Age distribution of 1921 and specific fertility rates of 1936	147·445	136·012	159·205	143·952

[1]Rates per 1,000 married women 15-49 years of age.

As in the case of Statement XXX, the effect of factor C, the change in age distribution of married women of child-bearing ages can be computed in two ways, *i.e.*, to observe the effect of this change in the age distribution of married women on the total fertility rates of the married women of child-bearing ages we can take the age distribution of 1921 and the age distribution of 1926 with either the fertility rates of 1921 or 1926. Between 1921 and 1926, the first method accounts for a reduction of 7·57 p.c. in the Prairie Provinces as a whole, the second method for a reduction of 7·16 p.c. The two methods, each of which appears equally valid, are close enough for reasonable conclusions. They give in some cases almost identical results and do not differ by as much as 1 p.c. in any instance. It will be noted that for the whole period 1921-36 this factor accounted for a reduction of between 8 and 9 p.c. in the crude birth rate of the Prairie Provinces as a whole.

The effects of factor D, the change in the specific fertility rates of married women of child-bearing ages, can likewise be computed in two ways, each of equal validity. Thus, as between 1921 and 1926, when we have measured the effect of the change in age distribution of the married women of child-bearing ages (factor C) using the specific fertility rates of 1926 as a basis, as in method 1 we must measure the effect of the change in specific fertility rates between 1921 and 1926 on the basis of the age distribution of 1921. Here again the results of the two methods are always reasonably close. The difference never exceeds 1 p.c. and in some cases the two methods produce almost identical results.

Over the whole period in the Prairie Provinces taken as a whole, the change in the specific fertility rates of married women between the years 1921 and 1936 would in itself have accounted for a reduction in the crude birth rate of between 22 and 23 p.c.

The preparatory computations in Statement L having been made, we may now proceed to the analysis shown in Statement M which corresponds to that shown for the Registration Area in Statement XXX. Each five-year period is given a separate section and the last section shows the effect of the total change between 1921 and 1936.

M.—ANALYSIS OF PERCENTAGE CHANGE IN CRUDE BIRTH RATES, PRAIRIE PROVINCES, 1921-1926, 1926-1931 AND 1931-1936

Province and Year	P.C. Latter Year of Period Forms of Former	Effect of Each Factor Contributing to P.C. Change of Crude Rates, if Working Alone							
		A	B	C		D		E	Product of Factors A-E[1]
				First Method	Second Method	First Method	Second Method		
1921–1926									
Prairie Provinces	81·95	101·66	93·60	92·43	92·84	92·32	91·91	100·86	81·9
Manitoba	75·75	102·56	93·15	92·14	92·66	85·31	84·83	100·93	75·8
Saskatchewan	85·01	101·50	93·51	92·54	92·95	96·09	95·67	100·78	85·1
Alberta	87·14	101·01	94·51	93·07	92·86	96·61	96·83	101·02	86·7
1926–1931									
Prairie Provinces	93·35	103·17	95·71	100·43	99·89	93·29	93·79	100·88	93·3
Manitoba	89·50	102·54	96·24	98·91	98·78	91·40	91·52	100·41	89·6
Saskatchewan	91·68	104·26	94·29	99·24	99·23	92·85	92·86	101·14	91·6
Alberta	99·11	102·86	96·48	102·49	102·47	96·59	96·61	100·91	99·1
1931–1936									
Prairie Provinces	87·88	103·41	94·68	99·01	98·85	90·33	90·47	100·42	87·9
Manitoba	88·03	103·11	96·09	99·67	99·73	88·90	88·85	100·28	88·0
Saskatchewan	88·72	104·56	93·13	98·22	98·47	92·19	91·96	100·72	88·8
Alberta	86·62	102·36	95·09	98·64	98·68	90·13	90·10	100·17	86·7
1921–1936									
Prairie Provinces	67·23	108·46	84·82	91·08	91·85	78·51	77·85	102·16	67·2
Manitoba	59·68	108·43	86·15	90·13	91·01	69·85	69·18	101·62	59·8
Saskatchewan	69·14	110·65	82·11	89·84	90·72	82·59	81·78	102·66	69·2
Alberta	74·82	106·35	86·71	93·89	93·39	84·29	84·74	102·12	74·5

[1] First method of calculating factors C and D used.
A—Change in proportion of women of child-bearing ages (15-49) years) to total population.
B—Change in proportion of married women to all women within child-bearing ages.
C—Change in age distribution of married women of child-bearing ages.
D—Change in specific fertility rates of married women of child-bearing ages.
E—Change in proportion of total births to legitimate births.

To sum up for the Prairie Provinces taken as a whole, between 1921 and 1936:—

The change in the proportion of women of child-bearing ages to the total population would have accounted for an increase of 8·5 p.c. in the crude birth rate.

The change in the conjugal condition of women in the child-bearing age groups would have accounted for a reduction of over 15 p.c. in the crude birth rate.

The change in the age distribution of married women in the child-bearing age groups would have accounted for a reduction of between 8 and 9 p.c. in the crude birth rate.

The lowering of specific fertility rates within marriage would have accounted for a reduction of between 21·5 and 22·5 p.c.

The increase in the proportion of illegitimate births would have accounted for an increase of slightly more than 2 p.c. in the crude birth rate.

As a result of the operation of these varying factors, the crude birth rate of the Prairie Provinces declined during the fifteen years by almost one-third. It will be noted that the percentage, 67·2, can be obtained by multiplying the percentages represented by the various factors, *i.e.*, 108·46, 84·82, 91·08, 78·51 and 102·16. For the two factors, C and D, 91·85 and 77·85 could be substituted for 91·08 and 78·51.

HOUSING IN CANADA

by

H. F. Greenway

SUMMARY

THE FIRST HOMES OF CANADA

Wherever wood was available, the log cabin or shanty almost invariably was the type of home built by the earliest Canadian settlers and there was little difference in the essential characteristics of these dwellings from one area to another. On the Prairies the sod house provided a noteworthy variation due to the absence of wooded areas. Progress in the early settlements was rapid, the one-room shanty in Central* Canada often being replaced by stone or brick structures within a single generation. In other areas, frame dwellings predominated even in the later stages of development. The nineteenth century witnessed a great change in the homes of Canada brought about by more abundant supplies of building materials, better transportation facilities and the rapid growth of cities. Concentrations of population necessitated greater emphasis on water supply, sanitation, fire prevention and communication systems.

HOUSING DEVELOPMENT IN URBAN AREAS

The principal urban development in Canada came after 1850, with Montreal, Quebec and Toronto being the only cities having more than 30,000 persons at that time. Growth was retarded by devastating epidemics among the poorly equipped immigrants and by feverish speculation in land values. Improvements in homes and living conditions came slowly at first but rapid progress was made between 1880 and 1914.

Modern underground sewage disposal systems did not completely replace the old open sewer until about 1900.

Effective horse-drawn fire fighting equipment came into general use between 1880 and 1890, about the same time as the telegraph fire alarm, while automotive apparatus was adopted later, between 1910 and 1920.

Modern municipal water systems existed in nearly all of Canada's principal cities by 1900, about one hundred years after the first private water supply company undertook to pipe water into the homes of Montreal.

Stoves had replaced fireplaces by 1850 but satisfactory hot-air furnaces did not come into general use until after 1880.

The invention of the tungsten filament incandescent electric lamp in 1911 greatly extended the use of electric lighting which had already largely replaced gas illumination over a decade earlier. The first gas lighting installation in Canada was made in Montreal in 1837.

The use of steam in both water and land transportation during the first half of the nineteenth century greatly facilitated the movement of merchandise and thereby contributed materially to higher living standards. Of even greater importance to urban dwellers has been the building of city and radial electric railways giving a much greater mobility to urban dwellers. These systems have been in operation in all the larger cities of Canada since 1900.

More recently, housing improvement has centred again upon innovations in actual construction technique which had been almost dormant for a period of fifty years. Efforts are being directed towards the production of lighter and more airy structures, designed to provide more actual living space in smaller and less expensive types of buildings. The pre-fabricated home, manufactured upon a mass production basis, has been the latest development in this direction.

SOCIAL ASPECTS OF URBAN HOUSING

Abnormal land values resulting from speculation, heavy taxation and a rapid inflow of central European immigrants have contributed to the formation of overcrowded slum areas in the larger Canadian cities and to the building of cheap unsatisfactory homes in scattered suburbs. The inadequacy of housing accommodation became so serious after the War that the Federal Government twice investigated the problem and attempted to ameliorate conditions by rendering

* Now Ontario and Quebec.

financial aid. Provincial and municipal efforts in this direction have not been extensive, although private and semi-public bodies have endeavoured to rouse public opinion by investigating and reporting upon slum conditions and housing shortages in a few of the larger cities. While informed opinion has come to general agreement that satisfactory low cost housing accommodation cannot be provided by private enterprise, this conclusion has not yet been followed by any concerted action to provide public assistance.

DESCRIPTION OF CANADIAN HOMES

Size.—Nearly 60 p.c. of all Canadian households in 1931 lived in homes ranging from four to seven rooms, while about 20 p.c. lived in less than four rooms and approximately the same proportion in eight rooms or more. The most representative number of rooms per household was six. Of Canada's 2,252,729 households, 18·2 p.c. were accommodated in homes of this size, which approximated the Dominion average of 5·6 rooms per household. The average number of rooms per urban household was 5·8, slightly above the rural average of 5·5 which was reduced by the small number of rooms characteristic of farm homes in the Prairie Provinces. Owned homes were consistently larger than rented homes in both rural and urban areas, the Dominion averages being 6·1 and 5·0 rooms per household, respectively.

Materials of Construction.—Over 86 p.c. of Canadian rural homes in 1931 were of frame construction, but the proportion in urban areas was much smaller. Among cities of over 30,000, it ranged from 4·9 p.c. for Toronto to 90·6 p.c. for Halifax. Wood was characteristic of the Maritimes, while brick and stone were prevalent in Quebec and Ontario. In cities of the four Western Provinces, the proportion of frame dwellings ranged from 67·4 p.c. in Regina to 88·1 p.c. in Edmonton, with brick and stucco accounting for most of the remainder.

Types of Dwellings.—Single houses accommodated 96 p.c. of rural and 59 p.c. of urban households. Of the remaining urban households, 26 p.c. lived in flats and apartments, 11 p.c. in semi-detached houses, 3 p.c. in rows or terraces, and less than 1 p.c. in hotels and rooming houses. The number of rooms per household was consistently largest for single houses and was successively smaller for semi-detached houses, rows or terraces and apartments or flats. Children formed 51·1 p.c. of the average Canadian household living in single houses, 47·7 p.c. in apartments and flats, 47·5 p.c. in semi-detached houses and 46·8 p.c. in rows or terraces.

The popularity of apartments increased materially in the decade after the War and in 1928 the value of apartment contracts awarded amounted to 26·4 p.c. of all residential building contracts. This percentage fell to 3·8 in 1933 and had mounted again to 14·2 for 1938.

THE ADEQUACY OF CANADIAN HOUSING ACCOMMODATION

The average number of rooms per person in Canada is estimated to have increased from 1·07 in 1891 to 1·27 in 1931. Although one room per person is considered satisfactory, there was at least 25 p.c. of the population in Canadian cities of over 30,000 living in less than one room per person in 1931 and in some cities the proportion was probably over 40 p.c. The clearest evidence of urban crowding was shown for tenants paying $15 or less per month in rent. A marked degree of crowding apparently existed also in the rural districts of the Prairie Provinces, as indicated by the following rural average numbers of rooms per person: Manitoba 0·93, Saskatchewan 0·84, and Alberta 0·88. More than average numbers of children were associated with crowding only where incomes were relatively low. There appeared to be little relationship between the type of dwelling and the average number of rooms per person.

URBAN EARNINGS AND HOUSING ACCOMMODATION

Averages of annual earnings samples in 14 cities in 1931 ranged from $1,379 to $1,934 per family. Corresponding 1936 averages for Prairie cities showed declines of approximately $450 per family. The commonest 1931 earnings level in these cities was between $1,200 and $1,600, a range which usually included between 20 and 23 p.c. of families sampled.

Variations in living standards were greater than differences in earnings levels. Living costs in some cities were relatively high, while the average level of earnings was not correspondingly high.

When family earnings were arranged in order of magnitude and divided into four equal groups, the boundary line between earnings of the lowest and second lowest groups (first quartile) was usually between 35 and 40 p.c. below the middle level of earnings (median). In the upper half, the dividing line between earnings of the third and fourth groups (third quartile) was commonly about 45 p.c. higher than the middle earnings level.

Earnings in 1931 averaged about $400 per year higher for owner families than for those of tenants. Actual averages centred around $1,700 for owner families and around $1,300 for tenants.

Although tenant families were approximately the same size as owner families below the first earnings quartile, tenant averages for rooms per person and earnings per person were materially lower than corresponding owner averages and both tenant and owner averages pointed to the prevalence of inadequate housing accommodation in this group.

There was more than one wage-earner in approximately one out of every five families sampled. The proportion was higher in owner than in tenant families and increased in progressive earnings groups up to $3,000.

The proportion of tenant families with less than one room per person in samples for different cities ranged from 15 to 41 p.c. and from 9 to 39 p.c. for owner families.

Earnings per person and rent per room for tenant families increased as rooms per person increased. Averages of earnings per person and rent per room for families with more than one room per person were sharply higher than for families with less than one room per person. There was convincing evidence of a close relationship between the amount of earnings and adequacy of accommodation.

City average proportions of tenant-family earnings spent on rent ranged from 19 p.c. to 27 p.c. in 1931. Proportions of tenant-family earnings devoted to rents declined in progressive earnings groups but there was evidence of greater emphasis upon housing in earnings groups between $800 and $1,600 per annum than either below or above that range. This appeared in the rate of increase in rooms per person and rent per room.

There was much greater variation in proportions of earnings expended in rent by individual families with earnings below $2,000 than for those with more than this amount. In other words, there appeared to be relatively wider differences in emphasis upon the home among tenant families with less than $2,000 per annum than among families with larger earnings.

Annual earnings of owner families averaged from 34 to 62 p.c. of the 1931 value of homes in the 14 cities examined. Generally the proportion of owned homes was high when these percentages were high, and vice versa. The lowest proportions of owned homes were found for cities with the lowest rent-earnings ratios.

TENURE

The proportion of owned homes declined between 1921 and 1931, the proportion of home owners to all householders having fallen by 5 p.c. in rural areas and by 3 p.c. in urban areas. Of the 2,252,729 householders enumerated in 1931, 1,362,896 or 60·5 p.c. were owners and 889,833 or 39·5 p.c. were tenants. There was 78·8 p.c. of all rural households in owned homes in contrast with only 45·6 p.c. of urban households. That density of population is an important factor affecting tenure is clearly indicated by the following figures:—

Percentage of Owners in Specified Areas

Rural	78·8
Urban under 1,000	63·8
Urban 1,000—29,999	53·9
Urban 30,000 and over	37·2

The average number of persons per household in owned homes was 4·57 as compared with 4·26 in tenant homes, with children accounting for 2·22 and 1·96 persons per household, respectively. The proportion of owners increased progressively in the higher age groups for family heads.

The relationship between occupational status and ownership is indicated by the following percentages which show the proportion of owners classified according to occupation: living on in-

come 71·1 p.c., employers 66·4 p.c., working on own account 56·0 p.c., no occupation* 49·9 p.c., and wage-earners 38·4 p.c. The proportion of owners varied little among families whose heads were born in various parts of Europe and North America but it was appreciably lower for the residual group.

Income appeared to be one of the most important factors affecting tenure although its influences have declined in urban centres.

Lodgers.—Almost 1,000,000 persons were classified as lodgers in 1931. There were 555,606 individual lodgers distributed in 350,155 households and approximately 427,000 persons in 154,000 lodging families. The great majority of these lived in private homes and only a residual proportion in lodging houses, hotels and institutions.

These persons were widely distributed and more prevalent in urban than in rural areas. There were 13·3 p.c. of owner households and 17·4 p.c. of tenant households with one or more individual lodgers, while 7·1 p.c. of owners and 5·1 p.c. of tenants gave shelter to lodging families.

Lodging families averaged 2·7 persons as compared with 4·3 persons for tenant households generally.

RENTALS

The rise in Canadian residential rentals between 1900 and 1913 approximated 70 p.c. and by 1930 they had advanced another 65 p.c. The first major decline on record, amounting to about 25 p.c., came between 1930 and 1934 and was followed by a small increase in the next four years.

The relationship between rentals and building-cost movements prior to 1913 was fairly close but since then rentals have failed to react appreciably to changing building costs. Rentals were affected even less by the volume of new building. In fact, increases in the supply of homes usually have come in times of prosperity when business was good, and increasing supply on such occasions has been accompanied by rising rentals. Conversely, in the depression years, rentals have fallen despite a serious shortage of low cost homes. Income apparently has been the most important factor in rental movements of the past two decades.

The number of tenants paying rentals of $15 per month or less in 1931 ranged from 22 p.c. of the total in Ontario to 57 p.c. of the total in Prince Edward Island. Typical urban rentals varied widely from between $10 and $14 to between $30 and $34, depending upon complex combinations of causes. These included differences in the types of dwellings which were most popular, in living standards, in climate and in building costs. Rent per room was generally a moderate amount higher in the Prairie Provinces than elsewhere in Canada.

THE VALUE OF URBAN OWNED HOMES

Nearly 50 p.c. of the value estimates placed by owners on their homes in 1931 ranged between $1,000 and $4,000 and less than 30 p.c. exceeded $5,000. Ownership was generally most prevalent where the proportion of low cost homes was the highest. The proportion of homes worth more than $4,000 owned by employers approximated 61 p.c. which was considerably higher than for any of the other principal occupational divisions.

The degree of concentration around a central value was much more pronounced for actual tenant rentals than for the estimated rental value of owned homes, which would indicate that home owners were scattered more uniformly than tenants over the different income groups.

A special survey of 473 homes owned by civil servants in 1931 showed that the annual cash outlay for shelter averaged $463, while the average buying cost of these homes was $4,174. Cash outlay for shelter amounted to 23·1 p.c. of annual income and 11·1 p.c. of average buying costs.

URBAN WAGE-EARNER FAMILY HOUSING, 1938

Kitchen sinks, inside flush toilets, running water, bathtubs and electric lights were found in a large majority of 1,439 urban wage-earner family dwellings selected upon a random basis of sampling. Racial origin, type of dwelling and tenure, however, appeared related to other

* Includes those who never had a gainful occupation, *e.g.*, widows and married women whose husbands live elsewhere; also those retired from gainful occupation and not living on income.

facilities, including refrigerators, garages, and children's play space. In general, tenant homes were better equipped with conveniences than owner-occupied homes within the family earnings range covered, *i.e.*, $450 to $2,500 per year.

Family earnings levels were but slightly related to the prevalence of basic conveniences noted above, but there was a definite correlation between amounts of family earnings and numbers of families with refrigerators, telephones, radios, motor cars and domestic help. This occurred regardless of tenure, type of dwelling, or racial origin.

Wide differences were found in the proportion of earnings devoted to shelter. Within a range of $50 in annual rental, differences in family earnings of $1,000 were quite common. The average number of rooms per person moved sharply downward as average numbers of children per family increased, although there was little relationship between numbers of children and family earnings.

The proportion of families living in owned homes increased rapidly at higher family earnings levels and with the age of the father. There was little evidence, however, of relationships between tenure and numbers of children per family, while ownership of motor cars was commoner among home-owners than among tenants.

Ratios of annual rent to income fell from 19·4 p.c. to 15·9 p.c. between family annual income per person ranges of $100-$199 and $600 and over, and advanced from 12·0 p.c. to 23·7 p.c. between annual rental ranges of under $150 and $550 and over.

City average rentals from families sampled in the $800-$1,199 family earnings range varied from $169 for Saint John, N.B., to $299 for Ottawa, Ont. Minimum rentals for self-supporting families were lowest in the Maritimes and in Western Canada.

THE HOUSING OF RELIEF FAMILIES, 1936

Approximately one-fifth of families selected at random from relief households in the five Prairie cities of 30,000 population and over were listed as home owners. Relief households sampled were predominantly 3-, 4- and 5-person families without lodgers.

The average number of rooms per person among relief families in the same five Prairie cities ranged from 0·75 to 0·91 as compared with a range from 0·99 to 1·07 for families earning between $400 and $799 a year.

In samples of all tenant families in 1936, from 30 to 35 p.c. of persons lived in homes providing less than one room per person, while among tenant relief families corresponding percentages were between 60 and 70 p.c.

The most typical relief family rental was from $10 to $14 per month, but a considerable proportion of families lived in homes renting from $15 to $24 per month. Both rooms per household and rooms per person increased as rentals increased, but there was no substantial corresponding increase in rent per room as in the case of "all tenant" samples. Higher rents among relief families, as might be anticipated, meant greater space rather than qualitative improvements.

NOTE.—Table 33, Part II, page 577, contains a summary of housing statistics for cities of 30,000 population and over.

PART I

86755—27½

INTRODUCTION

One section of the general schedule for decennial and quinquennial population censuses has been devoted to housing ever since 1871 when this record of Canada's people assumed the proportions of a systematic survey. During the intervening years there have been changes and additions in this section which limited the possibilities of historical comparison to the basic facts of population, numbers of dwellings and summary data on materials of construction. Although this has been more than compensated by the growing possibilities of cross-sectional analysis as the schedule was improved, no summary treatment of housing based upon five or six facts will produce data necessary for a complete statistical treatment. The basic aims which led to the preparation of this monograph were, therefore, of modest proportions. It was planned to collect and present such historical data as were available and to prepare a cross-sectional analysis of 1931 Census housing data in relation to other material bearing upon the general subject of housing accommodation. There was need for such an analysis to serve as a common denominator for intensive local surveys which have appeared in increasing numbers since 1930.

Actual investigation emphasized the paucity of significant historical statistics in contrast with the large body of historical documents dealing with housing. It was decided, therefore, to supplement these meagre statistical data with a brief summary of the evolution of housing in Canada and of some of the problems which have been associated with it.

The analysis of 1931 data may also serve a further purpose, *viz.*, to indicate the type of data of greatest value in statistical analyses of housing problems and thereby serve as a guide to future efforts in this field. Adequacy of accommodation presented the most important and the most difficult subject considered. It was impossible to examine qualitative aspects of crowding from census data except indirectly through reference to earnings and rent. The simple test of rooms per person is obviously inadequate without reference to the size of rooms, age composition of the family, heating, lighting, ventilation, etc. The gap in qualitative data has been partially filled by the material collected in a survey of wage-earner-family living expenditures in 12 cities during the year ended September 30, 1938. This material is presented in Chapter X.

In an attempt to evaluate the relationship between earnings and adequacy, a special sample analysis was made of 1931 Census data reported by approximately 24,000 wage-earner families in 14 cities. This proved most useful and suggested several new angles of approach to other questions noted following. The unwieldy nature of a complete census limits the possibilities of reclassifying data but approximately the same result may be obtained with comparative ease through the medium of samples. The loss of accuracy in such procedure is easily tested and in this case proved to be very slight.

The sample data opened up a new channel of approach to the question of variability in housing standards. Frequency distributions of the percentage of earnings devoted to rent classified according to family earnings and rent groups showed wide differences within individual cities, and the pattern of frequency distributions from city to city also revealed different characteristics.

Another valuable lead to further investigation came from an examination of averages of rooms per person and rent per room at progressive earnings levels. Rates of increase in these two series furnished an important clue to the relationship between earnings and emphasis placed upon housing accommodation. This material suggested that Engel's law in its simple form is not a sufficient description of family expenditure behaviour. It is true that the proportion of earnings devoted to shelter did decline as earnings rose but considerable importance may be attached to the fact that the rate of increase in rooms per person accelerated in the middle earnings groups and then declined in the higher brackets. The same condition also held in some cities with respect to the rate of increase in rent per room.

Analysis of housing supply and demand factors was hampered by an almost total lack of data on unoccupied dwellings prior to 1936. This question, which is in itself one of monograph proportions, was treated briefly in terms of the historical relationships between rents, cost factors and business activity, the historical series most indicative of variability in income. Evidence suggests that increases in income are of more effect in stimulating residential building activity than are reductions in building costs.

The general plan of presentation of data in this monograph is simple. The analytical section has been written around a few housing attributes including materials of construction, rooms and persons per dwelling, tenure, rentals and value of owned homes. Comparative rural and urban data on a provincial basis were examined and separate reference was made to cities of 30,000 population and over.

CHAPTER I

THE FIRST HOMES OF CANADA

Introductory.—The history of housing development in Canada may be divided into two stages. In the first, the pioneer era, attention was devoted mainly to the fundamental problem of providing shelter from the elements for settlers struggling to obtain a livelihood in a new land. In the Maritimes and Central* Canada, this period was drawing to an end between 1830 and 1850, but in the later-settled parts of Western Canada it continued until the turn of the century. Its termination usually coincided with the widespread establishment of planing mills and brick kilns in the newly settled areas. The day of the pioneer in the older provinces, of course, was not entirely over by 1850. New settlers are even yet pushing back the northern frontier and facing conditions only slightly less difficult than those existing one hundred and fifty or even two hundred years ago but transportation facilities now shorten very materially the duration of pioneer development.

The second stage in housing progress may be studied to best advantage in relation to urban expansion. The home builder's concern shifted from the basic need of shelter to considerations of comfort and problems of health created by the dense concentration of population. Very naturally, progress in this direction came first in the more populous centres where wealth had commenced to accumulate and the supply of skilled labour and materials was greatest. An examination of housing in this period, therefore, will be confined largely to urban areas.

Essential Similarity of Pioneer Homes in Different Areas.—The problems of the earliest settlers were similar in nearly all parts of the country and likewise their efforts to provide shelter followed the same pattern with variations dependent mainly upon differences in available materials, equipment and skill. The single-room log cabin or shanty served as the first shelter for most of the pioneer families, and descriptions of its construction differ little from the Maritimes to the Pacific. The early homes of French Canada and the first settlements by the United Empire Loyalists in Upper Canada are described in some detail in the two following sections and, with differences noted for the Prairies and British Columbia, the story for other parts of Canada reveals no essential variation.

The difficulties encountered by settlers pushing into new territories in the late eighteenth and nineteenth centuries were gradually lessened as progress in manufacturing made equipment and materials more plentiful and much less expensive. Glass and nails were still relative luxuries in the first quarter of the nineteenth century and the same was true of stoves. Still later the use of canvas for tents and tar paper for insulating purposes materially lessened the hardships of newcomers.

The Homes of New France.—Canada is indebted to Colbert, the efficient minister of Louis XIV, for its first census but it was confined chiefly to basic population facts and made no mention of dwellings. In 1666, shortly after the Hundred Associates had been deprived of their charter, a systematic census of the St. Lawrence colony was taken to give the home government some definite idea of its size and composition. Records were made of the total white population, the number of families and also of the number of artisans practising various trades. Dwellings in New France were first counted in 1685 but little attention was paid to their physical attributes before 1901. A study of pioneer housing, however, is of unique interest because of its close association with the life of the people. In the early stages of Canadian history, settlers built their own homes and, consequently, these buildings reflected the success of attempts to overcome environment; they revealed something of the character of the builders and the story of their evolution is a valuable commentary on the social and economic progress of the Dominion.

Despite the stone tradition of Normandy and Brittany from whence came most of the first settlers of New France, it is almost certain that stone dwellings were uncommon outside of Quebec city until the first quarter of the eighteenth century. Ship carpenters erected Champlain's

*Now Ontario and Quebec.

famous "Habitation" at Quebec in 1608 and colonists, settling in the next ninety years along the St. Lawrence and adjoining rivers, also built predominantly of wood. Not until the pressure of existence had lessened considerably could the ordinary settler turn his attention to the question of greater comfort. In most cases he faced the problem of wresting from the virgin forest a home and a livelihood with only the crudest of implements. Before erecting his home, he had to clear land upon which to build and then clear more for crops and pasture. He cared for these crops, made practically all of his own furniture and travelled long distances by canoe for supplies. The question of a home was urgent and the walls of a log house (pièce sur pièce) could be raised in a day with the help of willing neighbours. It is probable that many of the earlier of these structures would be designated now as one-room log shanties. The typical house of the family which had become well established, however, contained a spacious living room and several small bedrooms. It depended for warmth entirely upon a fireplace which usually consumed large amounts of fuel but generated little heat beyond its immediate vicinity. Benjamin Sulte in his history of French Canada noted that the Quebec Ursuline nunnery in 1643 had four fireplaces which according to the Sister Superior consumed the large total of 175 cords of wood a year.

The axe was all important in the construction of the first homes of New France. The colonist used it to fell, smooth and split the necessary logs and it was employed also to hollow out split logs for the roof. These were placed parallel and overlapping, with first a convex surface upward and next a concave so that every second log acted as a water drain during rain storms. There were few nails used in these first structures as nails were expensive and of limited use in log buildings. Such boards as were utilized had to be cut laboriously from logs with ripsaws.

There is considerable evidence that the *habitants* developed a high degree of skill in the building of the "pièce sur pièce." These were built strongly enough to last several generations, the thick walls conserving heat in winter and keeping the interior cool in summer. Shingles gradually supplemented logs and bark on the roofs, and porches were added to the bare exterior. Carless* observed that, in the eighteenth century, "The gallery is as necessary as the living room in the province of Quebec." While many of these buildings presented a bleak unattractive appearance, considerable effort was expended to relieve their drabness. Houses along the St. Lawrence were brightened by regular coats of whitewash which in summer provided a pleasing relief against the vivid green background of the countryside. In some districts, gently sloping and slightly concave roofs added considerably to the appearance of the typical home but more commonly the roof was of the Norman style, steeply sloping and ponderous.

While the establishment of homes did much to develop initiative and independence, it also made apparent the advantages of co-operation. The "raising bee" was an institution as common in New France as in the English-speaking settlements of the Maritimes and Upper Canada. Neighbours gathered and often in the space of one day erected the walls of a new settler's home. The fireplace and chimney were usually built by men with skill in masonry, to be paid back later with labour of another kind. The social life of the colony centred in the home. The large living rooms were the only places in which the pleasure loving *habitants* might gather after the day's toil. There they danced, sang, played games and upon occasion feasted, gathering now in one house and now in another during the long winter evenings when were held their "veillées du bon vieux temps."

Another interesting aspect of the housing question is revealed by fragmentary data relating to improvements in equipment and materials. The first settlers in new districts, who carried all their supplies by canoe and packed them on their backs over portages, could bring with them only a few things such as the glass needed for windows and possibly a few nails. Later they transported cast iron stoves in the same way. Before that time, however, local roads along the river fronts made it possible to haul lumber from the primitive saw mills which were established. The first of these employed only a long ripsaw, moved by a hydraulic wheel much as one guides a handsaw, but in time this was replaced by the more efficient circular saw. Thus, along the St. Lawrence, frame houses were common by 1750 and homes of stone were also seen.† Descriptions of the St. Lawrence riverside country in 1749 by Pierre Kalm and in 1832 by Pickering and Catharine Parr Traill do not point to much change during the intervening period. The attainment of reasonable comfort apparently found the *habitant* content with the simple life centering around his home and family.

* Old Manors and Old Houses of the Province of Quebec—Appendix to Benjamin Sulte's *Histoire des Canadiens Français.*
† Pierre Kalm—*Voyage Dans Amérique du Nord.*

Houses in Upper Canada.—The first houses in the area later to become known as Upper Canada were built along the Detroit River some time prior to 1750 by disbanded French soldiers. Their homes were on long strips of land with a narrow river frontage and resembled those of the *habitants* along the St. Lawrence. No further settlement of consequence occurred until the arrival of the western contingent of the United Empire Loyalists many of whom established themselves along Lake Ontario and in the Niagara Peninsula. Coming to this new land in many cases practically without equipment, they were forced to live very primitively until land for crops could be cleared and a livelihood provided. Thoughts were then turned again to the construction of homes more commodious and attractive. Houses along the Ontario lake front and the Upper St. Lawrence were rapidly improved and the pioneer shanty pushed back into the hinterland to shelter incoming settlers. This continuous evolution of homes is well illustrated in the record left by Mrs. Traill* in 1832. Referring to the trip from Montreal to Prescott, she wrote—"I am delighted in travelling along the road with the neatness, cleanliness and comfort of the cottages and farms. The log house and shanty rarely occur, having been supplanted by pretty frame houses, built in a superior style, and often painted white-lead colour or a pale pea green." Thirty years earlier much of this land had known no inhabitants other than roving bands of Indians. A few days after passing along the St. Lawrence, Mrs. Traill turned north along the Ottonabee River and found conditions very different. She describes in some detail a tavern which makes clear the contrast—"The interior of this rude dwelling (a log house) presented no very inviting aspect. The walls were rough unhewn logs, filled between the chinks with moss and irregular pieces of wood to keep out the wind and rain. The unplastered roof displayed the rafters, covered with lichens green, yellow, and grey; above which might be seen the shingles dyed to a fine mahogany red by the smoke which refused to ascend the wide clay and stone chimney. The floor was of earth, which had become hard and smooth through use . . . Besides the various emigrants, men, women and children, that lodged within the walls, the log house had tenants of another description. A fine calf occupied a pen in a corner, some pigs roamed about in company with some half dozen fowls." In Peterborough, a town of considerable size by that time, Mrs. Traill was lodged in a room which she pictured as follows: "Truly it looked like a bird cage rather than a bed chamber. The walls were of lath, unplastered and open so that the cool night breeze blew freshly through the bars and I could see the white frothy water of the rapids of the river dancing in the moonlight as I lay in bed." No doubt this room was to be plastered and finished outside with clap board as were many of the "second" or "third" homes but, in the meantime, pressure for accommodation was so great that it was the best to be obtained even by a traveller of means.

The earliest or "first" homes were nearly all a single room built of logs, often extremely small; in some instances not being more than ten feet long. More commonly, however, they ranged from fifteen to twenty feet in length and from ten to fifteen feet in width. As in New France, the walls of these log homes were often raised in a day by having a "bee" which combined the efforts of nearby neighbours. Finishing the house taxed the settler's ingenuity sternly, for nails were a luxury reserved for roofing, if, indeed, any were available at all. Doorways and windows were frequently cut out of the walls with axes, windows being limited to one or two and sometimes entirely absent. Hinges of wood fashioned by the more skilled craftsmen made it possible to hang doors but in many instances the earliest shanties had only a blanket hung across the entrance. Glass for windows was hard to procure and much that could be obtained was brittle and unserviceable. A loft used for sleeping was often built under sloping roofs sheathed with bark or split poles, hollowed out and overlapped. Lofts were ordinarily entered by means of ladders, sometimes from the outside of the shanty. Chimneys ranged from a hole in the roof cut over a rough stone fire place to solid stone structures built with mortar. Walls were drafty in spite of moss, mud and bark used to fill crevices. Such floors as existed were made from sawn boards, usually of unseasoned lumber which soon warped and had to be relaid. Lack of good lumber also hampered the construction of furniture which was practically all home-made. Beds, a table and benches or rough chairs were the principal items of furniture to be found in the earliest homes. One of the most concise and informative descriptions of the early settler's home is that given by Pickering after his wanderings through the new settlements in 1832.† He wrote—"The settlers in the woods appear to be the most independent and contented people, in their way, I

* *The Backwoods of Canada*—pp. 71, 92 and 93—Catherine Parr Traill.

† Pickering's *Emigrants' Guide to Canada*. Pickering was an English farmer who landed in the United States and travelled north looking for an opportunity to invest a small capital in the new land.

have ever met with; perhaps with only a log house unplastered, containing two rooms, one above and one below, sometimes only one below, with a large open fire place and a log fire. The chimney-back and hearth built of stone picked up about the farm; a board floor unplaned, perhaps hewed only, and sometimes at first, none; doors and gates with wooden hinges. A few articles of common household utensils, two spinning wheels—one for flax and one for wool, witb reaves of spun yarn bung around the inside of the house on wooden pegs driven into tbe logs; an upright cburn (women always milk tbe cows and churn); a gun or rifle; one, two, or more dogs; an oven out of doors at a little distance from the bouse, sometimes built of clay only, and others of brick or stones often placed on the stump of a tree near the house, and a shed covered witb the bark of a tree, or slabs to keep it dry; a yoke of oxen, some young steers, two or three cows, eight or ten sheep, perbaps a horse or 'span,' a sleigb, waggon, plough and harrow, tbe latter, perhaps, with wooden teeth, form all tbeir riches except tbe land, and they often raise 100 or 200 bushels of wheat, 80 or 100 of corn, some oats, peas, and perhaps buckwheat and a patch of flax, and fatten three or four hogs, and a cow, or yoke of oxen, besides seven or eight more store pigs, and a sow or two."

It is evident from this description that for some time after the first bome was prepared tbe main efforts of the settlers were devoted to crops and the raising of stock. The settlements of the Niagara Peninsula which Pickering described were not new but the house pictured above was undoubtedly one of the earliest types. Improvements in the home sometimes came gradually, sometimes all at once, with the old bouse being completely replaced by a new one. As houses became larger, verandabs were added in the French settlements, wbile colonists of Dutch origin built stoops or porcbes in front of the entrance under wbich barness was bung and various implements sheltered. Paint being very expensive, exteriors were carefully whitewashed, presenting very often a neat and trim appearance. Pickering commented particularly on Sovereign's tavern on Talbot Street,* as follows: "It is a good new farm bouse, with barns and otber outbuildings, and a sbed to bait travellers' horses under—and all being painted and whitewashed, cut a dashing appearance at a distance; but when you approach you may see that it is only a Canadian or I might have said an American tavern, with some of its windows broken, and the holes stopped with fragments of old clothes." The relative dearness of commodities and the small amount of money circulating seriously hampered the settlers' efforts to improve their homes and equipment. So far as materials were concerned, wood continued to hold an important place even after brick became generally available. Wood was not looked upon as an inferior building material. Guillet notes that brick was used occasionally in the closing years of the eighteenth century† but it was not employed extensively until thirty or forty years later. The use of stone was largely confined to areas such as that around Kingston where natural supplies of good building stone existed. Altbough occasional instances of excellent craftsmanship still remain, the first frame bouses were far from perfect. Tbey kept out neither the cold of winter nor tbe heat of summer but later development and improvement in this type of dwelling showed that very serviceable frame homes could be constructed. A novel feature which became prevalent around the middle of tbe nineteentb century was tbe elaborate and ornate fret work wbich appeared on verandahs and roof trimmings. By this time, of course, houses had assumed current day proportions in two and two and one-half storey structures. Tbey were, however, still heated by stoves. Tbe open-front Franklin, so popular in tbe first quarter of the century, gave way to box stoves and cooking ranges before tbe furnace finally made its appearance. It is interesting to note that as early as 1825 a considerable number of houses were for rent and presumably a definite tenant class existed. Labourers could secure accommodation in towns for as little as ten shillings per month, while wages for skilled labour were often 6 shillings per day. Even this amount for shelter was considered large when judged by rental levels of the time in Britain.‡

The First Homes of Western Canada.—Western development differed slightly from that in the East due chiefly to the scarcity of wooded areas on the Prairies. This situation produced the sod but§ which did not disappear in some of these parts until well after the beginning of the

* Op. cit.

† *Early Days in Upper Canada*—p. 171—Edwin Guillet.

‡ *Views of Canada and Colonists*—1844—p. 264—J. B. Brown—"Rents in Canada, as is generally known, are somewhat higher than they are in most places in Britain, because there both labour and money bring better returns. One large room, with one or two bed-closets (the kind of accommodation workmen with small families generally shift with at first) may be had in towns of Canada from 10s. to 12s. a month, or from about £6—£7 5s. per year."

§ The description of the sod hut of Western Canada was furnished by Mr. J. K. Finlayson, B.S.A., of the Dominion Bureau of Statistics.

twentieth century. It sheltered the early homesteader and not infrequently housed his family also for a few years until he was able to build a frame structure. Its unique character makes the sod house worthy of more than passing mention. Sods were ploughed up in strips about one foot in width from low lying ground. They ranged from two to six inches in thickness depending upon the character of the root growth and were usually cut into lengths of about two feet. Walls were made about three feet thick and their rigidity was increased by driving willow pegs through successive layers of sods. These structures were sometimes quite large but the first bachelor homesteaders' shacks averaged about sixteen feet in length and twelve feet in width. Board floors were laid on rows of poles or dimension lumber and frequently covered a small cellar. Window and door frames were also made of lumber and rough doors fashioned from narrow tongued and grooved lumber. Windows were usually small, the sash being purchased and set within the home-made frames. Construction of the roof varied but one accepted method was to lay poles closely together from the wall to a strong ridge-pole or timber, thus forming a slight gable which facilitated drainage. On these poles willow wands were placed at right-angles. Then came a layer of straw followed by a layer of sod. Such roofs, however, proved to be far from weather-proof and were replaced as soon as possible by boards covered with tarpaper and sod. Well constructed sod houses were heated easily by stoves of various types, the small kitchen range being the most useful general purpose heater. Curtains of sacking or other coarse material were sometimes used to separate small sections from the main room but ordinarily the first sod houses were without partitions of any kind.

The frame shanties of the Prairies were often light affairs which could be shifted from one place to another. The fragility of some of the early dwellings in the West may be illustrated by reference to the first structure built in 1862 upon ground at present in the heart of the city of Winnipeg. The land at the junction of the Red and Assiniboine River tracks was low and exposed, subject to inundation in spring and penetrating winds in winter. Of this building which was a combined residence and store, J. J. Hargrave says:—

"The house was erected upon a perfectly isolated spot, and the hurricanes which sometimes blew across the plains, it was then imagined would beat against the broad sides of the slightly built edifice with such force as would reduce it to its native timbers. But although the house had sometimes to be supported by huge beams propped against it in considerable numbers from the outside, and was believed by its inmates to be by no means a safe abode on a stormy night, the wind proved as powerless to overwhelm as the waters to sap the experimental venture."*

It was some years later before brick was successfully manufactured from Red River clay but by 1890 brick buildings were quite common in Winnipeg.

The heavy forests along the British Columbia coast made the construction of wood dwellings a comparatively simple problem in this area. Even before the advent of the white man, the coastal Indians had evolved wooden structures of several types. Prominent among these was the "semi-subterranean" home of the Salish tribe "formed by a circular excavation, over which a conical roof of timbers was built and covered with earth for warmth. These huts varied from twenty to fifty feet in diameter, and the usual entrance to them was by means of a ladder or notched log passing down through the smoke hole at the apex."† The coastal Indians also built great oblong wooden structures, as much as several hundred feet in length and fifty or sixty feet wide which housed many families. The first white settlers built log cabins or shacks similar to those constructed by settlers in Eastern Canada. The evolution of dwellings in this area has been concisely appraised by Bernard C. Palmer with the critical eye of the architect. Mr. Palmer writes—"The process of development from shack and log cabin to plain frame houses, and on to the more pretentious, but in the majority of cases, ugly buildings commonly referred to as 'mill-cut houses' was practically the same in all the towns. . . . This type of house was not confined to British Columbia alone, and is very familiar to all of us. Fortunately, this being an early development, they were mostly built close to the centre of the towns and have very largely been demolished to give place to commercial buildings."‡

The similarity of houses in different areas, noted above, extended back far beyond the frame house period. It has been discerned quite clearly in the earliest dwellings of French Canada and the first Loyalist homes in Upper Canada, described in the two preceding sections.

* *Red River (From 1861 to 1868)*—p. 307—J. J. Hargrave.
† *Canada and Its Provinces*—Vol. 21, p. 295.
‡ Development of Domestic Architecture in British Columbia—*Journal of the Royal Architectural Institute of Canada*—November 1928—Bernard C. Palmer, L.R.I.B.A.

CHAPTER II

HOUSING DEVELOPMENT IN URBAN AREAS

It has been noted previously that the problems of urban housing development differed materially from those faced by the first settlers. Concentrations of population attracted enterprises, including lumber mills and brick kilns which made basic materials much easier to obtain. Merchants stocked other building requirements, including tools, nails and glass. The supply of labour increased with the growth of population, although it remained relatively scarce throughout the nineteenth century. As it became easier to procure shelter, however, other difficulties arose connected with protection from fire and disease and efforts to improve living standards.

The Growth of Cities.—Before proceeding to examine progress in urban housing, it might be well to review briefly the early growth of the first towns and cities. This, of course, was well advanced in French Canada and the Maritime area before settlement of any kind appeared in Upper Canada and the territory farther west. The population of Quebec City reached 5,000 about 1740, and Montreal attained the same number approximately twenty years later. By 1817 the districts of Halifax and Saint John had passed 5,000 but not until 1831 did York (Toronto) reach this figure. Within the next twenty years immigration to Canada was rapid and Hamilton, Kingston, London and Bytown (Ottawa) all left the 5,000 mark far behind. Western settlement did not come until considerably later and in 1870 the population of Victoria was only 3,270, while the site of Vancouver had not even been surveyed. The district of Winnipeg included only 241 persons, being still relatively small compared to other settlements in the Red River area. Other Prairie settlements, now grown into cities, took form between 1885 and 1900.

Epidemics Among Immigrants.—Early development in Quebec and the Maritimes was much more gradual than in Ontario and farther west, and to some extent Eastern centres escaped abnormal features which characterized Western development. However, the heavy influx of immigrants, particularly between 1800 and 1850 created serious difficulties, of which Quebec had more than its share. The newcomers for the most part were ill-equipped for the ocean journey across the Atlantic and often were grossly misinformed regarding the life which lay ahead. Cholera ravaged the crowded ships and spread to the inhabitants of Quebec City and Montreal. When the settlers landed, there was adequate accommodation neither for the sick nor for those who had survived unharmed the ordeal of the ocean crossing. The record of misery witnessed in these years is appalling when judged by present day standards of sanitation and medical care. Three excerpts quoted below will convey some idea of the conditions which existed. The first written by Bigsby refers to Quebec presumably in the first quarter of the nineteenth century. He said:—

"These poor creatures (immigrants) on landing, creep into any hovel they can, with all their foul things about them. When they are so numerous as to figure in the streets, they are put, I believe, by the Colonial Government, into dilapidated houses, with something like rations, of which latter the worthier portion of the immigrants are apt to see little; they are clutched by the clamorous.

"The filthy and crowded state of the houses, the disgusting scenes going on in them, can only be guessed by a very bold imagination. I have trod the floor of one of such houses, almost over shoes in churned and sodden garbage, animal and vegetable."*

The effect of cholera ravages in Montreal in 1832 was graphically pictured by Mrs. Traill, who, herself, narrowly escaped death from this disease. She wrote:—

"The cholera had made awful ravages, and its devastating effects were to be seen in the darkened dwellings and mournful habilements of all classes. . . . In some situations whole streets had been nearly depopulated. . . To no class, I am told, has the disease proved so fatal as to the poorer sort of immigrants. . . In one house eleven persons died, in another seventeen; a little child seven years old was the only creature left to tell the woeful tale."†

* The Shoe and Canoe—I. 23—Bigsby—Reprinted in *Canadian Economic Documents*—Vol. II, p. 108—Innis and Lower—University of Toronto Press.

† *The Backwoods of Canada*—pp. 56-7—Catherine Parr Traill.

Although a quarantine was established in 1833 at Grosse Isle, an island about thirty-five miles below Montreal, the ravages were not stamped out for many years. The toll taken by ship fever at Montreal in the serious outbreak of 1847-48 has been described as follows:—

"The year 1847 was the year of the fatal ship fever. . . . Large sheds were erected in a field at Point St. Charles, where the emigrants were conveyed from the ships, the saddest sight being to see the nuns, at the risk of their own lives, carrying the sick women and children in their arms from the ships to the ambulances to be taken to the sheds, the majority to be laid in the trenches in rough deal coffins . . . They (the sheds) formed a large square with a court in the centre where the coffins were piled."*

Although the French Canadian population was able to resist these epidemics much more successfully than the immigrants themselves, deep resentment was created by the unfortunate manner in which immigration was handled. Ontario was not stricken as severely by the epidemic which beset the lower province but inadequate accommodation appreciably increased the death toll also in the upper settlements where the rigours of the new life bore heavily upon the exhausted immigrants. Later, in Western Canada, the inrush of settlers between 1885 and 1910 did not produce a recurrence of disease outbreaks but it did create a serious condition of crowding and the absence of adequate building regulations led to the establishment of very low housing standards among the unassimilated Central European population.

Speculation in Land.—Another general consideration contributing to abnormal urban development, more especially in Ontario and the Western Prairies was a fever of another type—the recurrence of speculative booms. These were very common in areas being opened up by the railways. John Howison found many examples of ungoverned speculative fever in his journeys through Upper Canada (Ontario) in the early 1800's. He commented upon one instance as follows:—

"About twelve miles above the mouth of the Thames, I passed a spot called the town of Chatham. It contains only one house and a sort of church; but a portion of the land there has been surveyed into building lots, and these being now offered for sale have given the place a claim to the appellation of a town. There are many towns like Chatham in Upper Canada, and almost all of them have originated from the speculations of scheming individuals. Often while surveying these embryo towns, have I been shown particular spots of ground that were to be reserved for universities, hospitals, churches, etc., although not even a hovel had yet been erected within the precincts of the anticipated city."†

The boom era in Western Canada followed the opening of a railway connecting Winnipeg with lines in the United States in 1879. From 1880 to 1885 the population increased from about 8,000 to 25,000 before a temporary reaction occurred. Land booms followed the railway across the Prairies and speculation in land became rampant. Embued, no doubt, with the buoyant optimism of the period, F. A. Talbot in 1911 wrote, speaking more particularly of the far West:—

"Dense forest to-day, tents next week, wooden frame houses the following month, masonry buildings a year later, a healthy town in five years, a full-blown hustling city in ten years, with tramways, telephones and what not. Within a quarter of a century land grows so scarce and costly in the heart of the centre that the sky-scraper has to be brought into vogue."‡

Such overstatement may produce a smile thirty years later, but it was sufficiently plausible bait to offer real estate speculators in that day. Western towns were laid out accordingly with the result that when the rapid acceleration in immigration ceased, the existing population had to bear taxation for the maintenance of streets and public utility equipment far in excess of existing needs. This has undoubtedly interferred with the natural course of subsequent development and has tended to discourage the ownership of homes.

Improvements in Standards of Living Accommodation.—Such factors as unregulated immigration and violent speculation in land values are, of course, related to the actual physical characteristics of homes only indirectly. The nature of immigration tended to lower living standards generally and contributed to the growth of slum areas, while high land values forced prospective owners to invest abnormally large amounts on home sites at the expense of the houses which were erected upon them. These considerations are mentioned mainly to

* Sixty years in Canada—p. 26—William Weir—Reprinted in *Canadian Economic Documents*—Vol. II, p. 123—Innis and Lower.

† Sketches of Upper Canada, 1825—p. 74—John Howison—Reprinted in *Canadian Economic Documents*—Vol. II., pp. 27-8—Innis and Lower.

‡ *The New Garden of Canada* (1911)—p. 32—F. A. Talbot.

give a background for the subsequent sections which deal with factors more directly related to the improvement in standards of living accommodation. They will be dealt with under the following heads: sanitation, fire prevention, water supply, heating, lighting and communications. Where no reference is given for early data concerning Canadian cities, it has been furnished by civic authorities from the records of the city in question.

At the outset, it must be recognized that improvement in housing standards has been evolutionary; hence, dates associated with the acceptance of new inventions have only an approximate value. For example, there was an interval in Canada of nearly forty years between the first appearance of electric lights and the time when they had generally replaced gas illumination. A much longer period elapsed in many of the older cities between the construction of the first underground sewer and the complete abolition of open sewers. The story of fire prevention, heating and the development of communication facilities is likewise evolutionary in character. Gradual acceleration in this process could be detected soon after 1800 but it was between 1875 and 1900 that the most rapid progress was made. Much of this can be traced to advantage from municipal by-laws which reflect the general acceptance of new inventions in the public utility field and likewise reveal the hesitant acceptance of new responsibilities that had long been left to private enterprise. Almost all the more important civic services of to-day, with the exception of fire prevention, were initially contracted for in Canadian cities by individuals or private companies. In a few cities civic authorities did not assume complete administration of sanitation until the early years of the Great War.

Sanitation.—Sanitation in urban areas was one of the first problems to demand attention, and yet modern sanitary equipment was not thoroughly established either in Canada or abroad until early in the present century. Open cesspools and drains were not unfamiliar sights in English cities as late as 1875. Pigs still rooted in the accumulated litter of New York's back streets in 1850 and apparently civic provision for the removal of street refuse was very inadequate. In the newer settlements of Canada, the problem of sanitation received early recognition, but the first regulations concerning it make strange reading to-day. The newly established settlement of York (Toronto) in 1800, its eighth year, issued an order to keep pigs from the streets. This ruling was rescinded in 1803, however, and properly yoked pigs were again allowed to roam at large, presumably because of their value as scavengers. In 1797, Montreal engaged six cart drivers to carry away the winter's accumulation of refuse in the streets. In 1805, citizens were instructed to assist during April by gathering together all such materials bordering on their property but it was not until 1853 that the city acquired land on which to dump its refuse. In 1870, the task of removing refuse was let by contract to private individuals but this system proved unsatisfactory, and in 1893 civic employees were hired to perform the work. Later, in 1900, an Incineration Commission was added to the municipal staff. Apparently the private contract system persisted in many cities until as late as 1915, but between 1875 and 1900 municipal departments were established in most of the larger centres to perform this service.

Sewage disposal presented a vexing problem particularly in the first half of the nineteenth century. During that period underground sewers had by no means completely superseded open ditches draining into creeks and rivers. Mrs. Traill in 1832 commented at some length upon the open trenches along the Montreal waterfront and considered them a serious threat to health. Indeed, modern sewage disposal systems have been dated from the rebuilding of Hamburg in 1843 after it had been destroyed by fire.* Enclosed sewers became indispensable with the adoption of the inside water closet but drains of this type were by no means general before 1900. Montreal made them obligatory only in 1901, although part of its sewage system was underground as early as 1835. The perfection of large size concrete tiling about 1900 greatly reduced the cost of sewage systems which had hitherto been built principally of brick. Most cities of Western Canada adopted underground systems in the early stages of their growth, as improved methods of engineering technique had already been introduced before these centres found it necessary to deal with the question of sewage disposal.

Fire Prevention.—Fire prevention presented another serious problem, particularly in the cold winters when big fires were necessary for warmth, and water was extremely difficult to procure in sufficient quantities when flames got out of control. Chimney fires were common

* *The Evolving House*—Vol. I, p. 308—A. F. Beamis and John Burchard 2nd—The Technology Press, Massachusetts Institute of Technology.

and occasionally serious conflagrations wiped out the homes of entire settlements. Sometimes damage ran into millions of dollars as in the case of the last big fire in Canada which destroyed Hull and part of Ottawa in 1900.

The settlement at York had its first experience with fire when the Governor's residence burned down in 1797. Subsequently, each householder was required to keep two buckets to be used only in case of fire and also two ladders. In 1802, Administrator Russell presented the town with its first fire engine and grateful citizens erected a fire hall by public subscription. An earlier gift of a fire engine was made by King George IV to the United Empire Loyalist settlement of Shelburne, N.S., in 1775. These engines and many that followed them were light and simply constructed, often being drawn by hand. Indeed, the streets of the time would have made it impossible to use effectively any machine of considerable weight. Of Montreal's earliest efforts to fight fire, little is known, but it is on record that a horse was acquired for the fire corps in 1850. In addition to acting as firemen, the corps was responsible, until 1868 for watering the streets. By 1859, each sub-station had a horse and there were two at the central station "for the purpose of conveying apparatus to a fire." In 1863, Montreal organized its first municipal fire brigade, which was also the first non-volunteer brigade in Canada. This was for some years reinforced by a voluntcer corps of three officers and thirty-six men. There is no record in Canada of the early English practice of fire fighting companies which protected householders who paid specifically for this service. The volunteer fire brigade played an important part in defending the homes and property of Canadian citizens and did not disappear from cities of Western Canada until about 1910. Improvement in equipment came gradually, but by 1880 horse-drawn engines were generally used in Eastern Canada and about ten years later, in the West. Automotive engines came into general use between 1910 and 1920. The telegraph fire alarm, although invented shortly after 1860, was not generally adopted for several decades and the observation tower on fire stations is still to be seen in some Eastern cities, although it serves little purpose now except as a place to stretch wet hose for drying.

Water Supply.—The threat of fire, as already noted, was particularly serious in the early days when settlers depended principally upon streams and lakes for their water supply. Nor did the digging of wells later serve to reduce it greatly. Although the principle of the suction pump had been known to the Romans, the windlass and long pole used as a lever were employed extensively in the early settlements, and still are in outlying rural districts. Private companies first undertook to provide the older towns with water piped into individual homes. Such concerns were established in Montreal in 1801, in Saint John in 1838, and in Toronto in 1841, but apparently they proved unsatisfactory and the municipal authorities of newer settlements undertook to provide the water supply as soon as the size of the town warranted such a project. The gradual acceptance of the water closet and bathtub in the nineteenth century made town residents much more desirous of possessing modern water systems. The water closet was first introduced into the United States in 1810 and the bathtub came later in 1842. The first American sponsor of the bathtub became familiar with it through Lord John Russell in England about 1840, although there are records of bathtubs as early as 2,000 B.C. Curiously enough, the bathtub met initially with considerable antagonism and was denounced both by the clergy of the day and by medical authorities. In spite of this, its acceptance was fairly rapid and by 1860, New York's leading hotel could boast of three bathtubs.* Modern civic water systems existed in nearly all of Canada's principal cities by 1900.

Heating.—The development of scientific heating equipment has come, for the most part, within the past fifty years, although the principle of the present-day warm air furnace heating system is as old as the Roman holocaust. The earliest form of box stoves on the American continent has been identified with the name of Benjamin Franklin and dates from, approximately, 1750, while a stove made in Scotland and known as the Dundee was the first to be widely used in Canada following its introduction at the beginning of the nineteenth century by British immigrants. It was composed of two sections, a lower one for fire, and an upper chamber for cooking and baking. This was copied by the early foundries of Lower Canada and it is of interest to note that at the St-Maurice Forges near Three Rivers was built the first successful foundry on the continent. The earliest blast furnace on this site was established about 1733, nearly seventy years before the furnace at Lyndhurst, northeast of Kingston, which apparently was the first

* A. F. Beamis—Op. cit., p. 307.

one built in the Upper province. The forerunners of the present-day under-oven range appeared about the middle of the nineteenth century. In this type, the heat moves across from the fire-box above the oven, then descends and completely encircles it before rising into the chimney.

Gas did not invade the field of cooking stoves until several decades later due to its expensiveness relative to wood as a fuel. The manufacture of gas cooking stoves was commenced in Toronto in 1881 but their adoption was very gradual and by 1905 there were only 8,992 stoves and 11,533 gas rings in the city. However, popular favour increased widely from then onward and by 1922 there were 109,033 gas ranges and 35,354 gas rings in Toronto.* Still more recently the use of electric stoves has become general in urban areas, although electricity has by no means superseded gas as a cooking fuel.

The wastefulness and inadequacy of stoves as a source of heat for large homes led to experiments between 1850 and 1860 with warm air furnaces in Canada. It was not until 1884, however, that a satisfactory system of circulation was evolved in which air was re-circulated rather than being replaced by cold air from the outside. With certain modifications this re-circulation system is still commonly used. It has been supplemented widely by steam heating units fueled with coal and in recent years with low grade oil. The development of steam heating has been one of the principal contributing factors to the rapid growth of multiple-unit dwellings. In the past fifteen years large central plants have been built which supply steam to heat the homes in areas comprising many city blocks. This method of heating is particularly effective where the climate is severe and winters are comparatively long.

Lighting.—The lamps of antiquity had been replaced largely by the tallow candle before settlement in Canada began. Many pioneer examples of the former can still be found, however, somewhat resembling present day cream jugs with a spout from which a wick protruded. The candle remained in general use until the latter half of the nineteenth century, although gas lighting was common in larger cities by 1850. Both gas and electricity were regarded as impractical novelties in their first stages of development. It is said that gas lighting was introduced into a Philadelphia museum in 1820 and advertised as an attraction among the curiosities.† Gas was installed in Boston in 1822, in New York in 1823, and in Philadelphia in 1837, the same year as its first Canadian appearance in a few Montreal shops. The early electric arc lights were also a novelty, and on the occasion of their introduction to Toronto in 1879 by a local restaurant, free ice cream was served during the first day they were used. A small but important improvement in lighting was made possible by the appearance of glass chimneys for kerosene lamps in 1860. The latest important contribution to modern lighting equipment came in 1911 with the invention of the tungsten filament incandescent lamp which rapidly superseded the electric arc variety. The latter was not well suited to use in private residences, although employed to advantage in street lighting. Electricity did not generally replace gas illumination in Canadian cities until about 1900, although initially introduced over twenty years earlier. As with other developments, many Western cities did not reach their majority until lighting technique was in its later stages and thus had no experience with gas illumination except in the natural gas districts of Alberta.

Communications.—It is difficult to appraise the influence of improvements in communications upon the living conditions of a community, but undoubtedly this is a matter of first-class importance. The Scottish engineer Thomas Telford, famous for his roads in the Highlands of Scotland, was strongly of that opinion. Referring to his new Highland roads built soon after 1880, he wrote: "I consider these improvements among the greatest blessings ever conferred on any country. . . It has been the means of advancing the country at least a century."‡ The benefits contributed by roads and canals in that day, apart from the resultant appreciation in land values, were probably due mostly to greater ease with which produce and merchandise could be moved. To-day it has also become important that the population itself may have greater mobility, particularly within metropolitan areas. For the major part of the nineteenth century the worker in large cities had of necessity to live close to the factory or office. Now, he may live comfortably in uncrowded suburban areas as much as twenty or thirty miles distant from his work and yet obtain rapid transportation at a cost which less than two generations ago would have been deemed unbelievably low. The transition has been accomplished by rapid strides in the science of road building and the construction of locomotive and automotive equipment.

* *Seventy-five years, 1848-1923*—The Consumers' Gas Company of Toronto.
† A. F. Beamis—Op. cit., p. 298.
‡ From *The Story of the Road*—p. 230—J. W. Gregory—Alexander Maclehose & Co., London.

On the North American continent, the earliest significant improvement was in the realm of steam, first the steam paddle-wheeler on the principal water routes, and later the steam railway engine. The first steamship to operate in Canada was built in 1809 but it did not entirely supersede the old horse-boat packet for short distances until after 1850. This latter type of boat was propelled by two paddle wheels at the sides and received its motive power from horses which walked in a circle on the deck, turning the wheel shaft as they moved. The first Canadian steam rail system connecting La Prairie, opposite Montreal, with the Richelieu River, fifteen miles away, commenced operation in 1836. Rail development was rapid and the last spike in the Canadian Pacific transcontinental system was driven in 1885, less than fifty years after the first short line was finished. Canada now has approximately 42,000 miles of steam railway communication.

With respect to roads, quantity rather than quality was the slogan of the nineteenth century. Although macadam appeared in Canada shortly after widespread adoption in England, its use was limited largely to the principal streets of cities. Yonge Street in Toronto and a short stretch between Kingston and Napanee were among the few macadamized stretches of Upper Canada in 1840. Halifax streets were paved with macadam, however, before 1829. Asphalt presumably appeared considerably later since it was not used in London, England, until 1869. Asphalt lanes were built for bicycles along the curbs of New York's main thoroughfares in the last quarter of the nineteenth century but apparently hard surfaces were by no means general even in the larger cities during this period. It was the coming of the automobile about 1900 which made hard-surfaced roads of growing importance. Hard-surfaced highways in Canada in 1936 aggregated approximately 10,000 miles in addition to the streets of large towns and cities built mainly of asphalt and concrete. There were also 88,000 miles of gravel roads and 311,000 miles of earth roads. The automobile has become an increasingly important factor in suburban development, tending to relieve population pressure in the principal metropolitan areas.

Of even greater importance in this respect has been the rapid extension of urban and radial electric transportation systems. These rapidly replaced the old horse cars which had their vogue between 1860 and 1900. By 1913 all the more populous Canadian cities possessed modern street car systems which within the present decade have been supplemented extensively by the auto bus. With the extension of hard smooth-surfaced roads the obvious advantage of greater mobility and economical operation has made the bus increasingly popular.

Although fundamentally less important, the telephone and radio have come to be highly valued instruments of communication contributing greatly to the comfort and enjoyment of the modern home. The number of telephones in use in Canada rose from 4,400 in 1883 to approximately 1,200,000 in 1936. Radio's acceptance was even more rapid; considered a novelty for several years after the Great War, improvement in broadcasting and reception equipment caused radio sales to increase by leaps and bounds. In 1937 there were over 1,000,000 receiving sets in Canada, or almost one set for every two homes.

Even from this very brief account of the improvement in Canadian housing standards, one cannot fail to note the striking acceleration of progress within the past fifty years. This would be made more impressive by the enumeration of the manifold uses which have been found for electricity in the modern home. The electric washing machine, the vacuum cleaner and the electric refrigerator stand out among the instruments which have combined with electricity to improve living conditions materially even within the last twenty years. Widespread acceptance of these devices has become much more rapid with the gradual extension of the districts in which electric power is available.

Within the past ten years, however, interest has again been focussed more and more on the structure of the home itself and it is probable that this tendency will increase. It has been fostered by high building costs associated with the conventional types of houses which have changed little in basic essentials for many years. Efforts are now being directed to produce less ponderous homes at low cost and to introduce an element of flexibility into their structure. Progress in this direction in the United States has not as yet been paralleled in Canada due in part to climatic considerations. There is no reason to believe, however, that climate presents an insuperable difficulty, and it may be anticipated that this new development will gather momentum as production technique in the manufacture of fabricated homes improves. The outstanding success of Sweden in this field gives support to such a view.

CHAPTER III

SOCIAL ASPECTS OF URBAN HOUSING

Effects of High Land Values.—The elaborate provisions in early speculative land subdivisions for churches, parks, hospitals and even universities were far in excess of ultimate urban expansion during the principal immigration movement. Speculation was probably the chief cause of the unsatisfactory situation which arose. In the first place it led to land values which generally bore no relationship to economic worth. This situation was further aggravated by assessment valuations for taxation purposes based upon speculative prices, and corrective revisions were long delayed. Subdivisions were made far in excess of the requirements of the population which scattered over them. Yet, once new sections had been even sparsely settled, municipal governments were faced with the problem of providing costly services which would have been adequate for a much larger number of people. The unduly heavy tax burden this imposed, coupled with high land costs, inevitably affected building adversely and was responsible for the appearance of small and incommodious dwellings in suburban areas. The same causes produced a different but equally unsatisfactory result in the central districts of growing cities. High shelter costs there led to the appearance of congested slum areas towards which the immigrant population from Central Europe tended to gravitate. Industrial workers of slum districts existed in conditions which endangered health and tended to degrade living standards. In 1912, Bryce M. Stewart* surveyed a few of these areas in different parts of the Dominion and discovered unsatisfactory conditions in many places which had experienced sudden growth due to immigration. In one city, which still numbers less than 30,000, the following data were collected by Mr. Stewart for a single city block housing 337 persons of five Central or Southern European nationalities.

41 houses occupied, containing 132 rooms and 207 beds.
5 stores in 3 houses.
1 vacant house.
2 separate stores.
19 houses with a newspaper in the language of the occupants.
5 houses with a newspaper in English.
34 of the 41 households were owners.
No baths.
18 houses with water taps. Three wells were also used.
No inside toilets.
33 householders stated there was no garbage removal.
20 cows, 5 horses, and a few hundred fowl were housed in the block.
Rents ranged from $6 per month for a one-storey house of two rooms to $13 and $14 per month for a two-storey house of five rooms.
Wages: $2.00 to $2.25 per ten-hour day and from 22½ to 30 cents per hour in the two principal industrial concerns of the neighbourhood.

In larger cities the appearance of tenements, inadequately provided with light and air, became a source of trouble that doubtless would have been much more serious had not the influx of population been checked at the time of the Great War. This was particularly true of ocean ports where relatively large floating populations existed.

Effects of Instability of Population in Small Centres.—Another factor which retarded housing improvement, particularly in Western Canada, was the instability of population in many of the smaller centres. New settlers followed opportunity which moved ever farther westward as the railways pushed on across the Prairies. Home building under such conditions was a matter of speculation rather than investment, a speculation made costly and unattractive by inflated real estate prices and heavy taxation. This condition, of course, grew less serious as the location of industry became more permanent. More recently it has found a faint reflection in the gradual shift of population northward but this phenomenon has been much less disturbing

*Housing our Immigrant Workers—*Proceedings of the Canadian Political Science Association*—1913—pp. 104-5.

than the immigrant inrush prior to 1910. The latter movement owes its origin mainly to the growing importance of mining activities and to the protracted economic distress in the southern farming districts of the Prairie Provinces.

Organized Efforts for Improvement.—Apparently the haphazard character of urban development in Canada did not arouse organized efforts directed toward reform until many evils were firmly established. The growing need of planning led to a housing and town planning conference in Winnipeg in 1912 but it is difficult to trace any effect of this meeting upon subsequent developments. In the same year the Provinces of New Brunswick and Nova Scotia enacted town planning legislation but little or no use was made of it. In 1913 the Province of Ontario passed "An Act to encourage Housing Accommodation in Cities and Towns." This allowed municipalities to guarantee up to 85 p.c. of the bonds issued by housing companies. The Toronto Housing Company subsequently received a $500,000 guarantee from the Toronto City Council in 1913 and since then has built accommodation for 334 families. This represents the only important result from the initial Ontario legislation. Early attempts were made by a few municipal authorities, notably those of Vancouver and Winnipeg, to govern lighting and air provisions in multiple-unit dwellings but such attempts met with much opposition from landed interests. It was also difficult to obtain evictions from condemned properties when suitable vacancies for tenants with limited income were extremely rare.

Following the Great War the question of inadequate housing appeared in more acute form and drew the attention of a National Industrial Conference convened by the Dominion Government in 1919. This meeting associated current industrial unrest and unsatisfactory social conditions with "land speculation, poor and insufficient housing and high rents." At its recommendation a Royal Commission was appointed to study Canadian social and industrial problems. The Commission's report included the following paragraph:—

"Another cause of unrest which we met with at practically every place we visited was the scarcity of houses and the poor quality of some of those which did exist. In nothing has production more signally fallen off during the four years of war than in the building of dwelling houses. The existing condition for the worker is affected not only by the absence of sufficient housing accommodation, but by the inadequacy of those that are in existence. Poor sanitary conditions and insufficient rooms are the chief complaints. The high price of building land and of building material have made it impossible for the worker to provide himself with a home, and some means should be adopted, with as little delay as possible, to remedy this defect."*

Subsequently, the Dominion Government authorized the loan of $25,000,000 to the provinces on a twenty-five year 5 p.c. basis. Nearly the full amount was expended, the provinces in turn allocating allowances to municipal authorities. A total of 6,244 houses in 179 municipalities were built under housing schemes financed in this manner but subsequent records showed mismanagement of funds and inefficient administration of these projects by the municipal housing authorities. In evidence presented to the special Parliamentary Committee on Housing in 1935, the only outstanding record of successful operation under this method of financing was presented by the City of Winnipeg. General improvement in economic conditions rather than government aid apparently was responsible for the moderate degree of amelioration in the housing situation after 1920.

The return of economic depression in 1930 was again accompanied by a sharp decline in building activity and consequent overcrowding. Since that time housing conditions have been subject to careful scrutiny in several of the larger Canadian cities. Citizen organizations in co-operation with social service workers have conducted slum surveys and embodied their findings in reports. Halifax, Montreal, Ottawa, Toronto and Hamilton have been surveyed in this manner. In Winnipeg and Hamilton annual housing surveys have been made at intervals during the past decade by city Health Departments and the Edmonton Department of Health made a beginning in this field in 1936. Citizen committees in Calgary have been intermittently active since 1929 endeavouring to stimulate new building but apparently have not dealt with the question of replacement. Vacancy surveys by real estate boards and postal authorities are also conducted annually in many cities but these are purely quantitative in character and do not distinguish between desirable and undesirable properties.

The reports referred to above give ample evidence of the widespread existence of unsatisfactory conditions and the following excerpts from them have been included to give some idea

* Report of Royal Commission on Industrial Relations—Supplement to the *Labour Gazette*, July, 1919—p. 13.

of the problems to be faced by authorities dealing with the shortcomings of housing premises now available. They are concerned only with the unsatisfactory aspects of the housing situation and do not portray typical or average conditions. In spite of the serious nature of these findings, Canadian housing is considered to compare favourably with that in most other countries.

REPORT OF THE HALIFAX CITIZENS' COMMITTEE ON HOUSING, 1932

It was found that a shortage of dwellings existed more particularly "in houses of a class suitable for workingmen, and the lower income groups," and that building deterioration had become a serious problem.

"That there are, on the admission of the Board of Health itself, 192 condemned houses at present occupied by 370 families, is one of the most serious findings of all. The fact, moreover, that there are 1,273 additional dwellings condemnable, but such as with repairs will pass inspection, is a matter of scarcely less concern."

"The sanitary conditions of many of the houses are relatively worse than the structural features already considered. The survey reveals a large percentage of buildings in the area examined unfit for hygienic occupancy. In regard to sanitary conveniences the survey shows the common tap or sink to exist in many quarters. The insufficiency of these conveniences has developed with the crowding of numerous families into houses formerly occupied by fewer tenants. It is quite common to find one or two sinks in a hallway in a building occupied by from three to seven families. Members of families frequently must travel two or three flights of stairs to water supplies. Toilet accommodation is distressingly inadequate and inconvenient."

"As a result of the investigation, it would appear that 11,197 men, women and children are living under conditions believed to be serious enough to be included in this special survey."

REPORT ON HOUSING AND SLUM CLEARANCE FOR MONTREAL, 1935

A joint committee of the Montreal Board of Trade and the City Improvement League reported on the Montreal housing situation in March, 1935. Without going into detail concerning existing slum conditions, this report outlined the areas in which they occurred and described necessary correctives.

The introduction stated that "The Committee has found that the slums of Montreal are relatively small even when taken as a whole, but they are scattered throughout a dozen wards where their presence does harm to adjoining real estate values. The area of potential deterioration is extensive."

Again, "The Committee has been forced to the conclusion that an annual construction programme of 4,000 dwellings at rentals within the means of the lower wage groups is required for Montreal."

The Committee estimated that 18,000 persons needed rehousing and that a total of 70,000 dwellings were required at rentals below levels which private industry could offer.

In 1936 and 1937 an excellent intensive cross-sectional survey of working-class dwellings in the cities of Montreal and Verdun was made by the Department of Planning and Research of the Montreal Metropolitan Commission. Preliminary results based upon 1,376 dwellings revealed the need of much repair work and widespread obsolescence. Marked signs of dilapidation were found in the following cases:—

Walls	430
Ceilings	527
Floors	461
Doors-Windows	324

The first Report stated—"Of the 1,376 dwellings investigated during this survey the outstanding characteristic noted was the almost complete absence of baths. This condition is widespread but it is most evident in the older sections of the city. Actually we found 1,056 dwellings without baths and 320 with baths, (or about 77 p.c. of the total without baths and 23 p.c. of the total with baths)."

"The plumbing in the dwellings investigated was, generally speaking, old, although still serviceable. Our investigators listed 1,281 as being old and 72 as being modern."

The findings of the Commission substantiated the claim of the earlier Report that a serious need for rehousing existed in Montreal.

REPORT ON RELIEF HOUSING CONDITIONS IN THE CITY OF OTTAWA, 1935

UNDER THE JOINT AUSPICES OF A REGIONAL COMMITTEE OF THE NATIONAL CONSTRUCTION COUNCIL OF CANADA, THE OTTAWA WELFARE BOARD AND THE OTTAWA TOWN PLANNING COMMISSION

The statistical summary of this report included the following data on relief dwelling units not satisfying a minimum standard of health, and indicated that 3,529 dwellings, representing a population of 24,835 out of 137,991 total population, were unsatisfactory in various respects as follows:—

Bad state of exterior repair	485
Inadequate heating	2,271
Inadequate lighting	338
Inadequate sanitation facilities—	
Dwellings without separate—	
wash basin	991
bath	1,113
Families without separate—	
sink	1,854
wash basin	3,087
bath	3,209
water closet	1,949
Lacking cooking equipment	868
Inadequate food storage space	582

The city Medical Officer's report for 1934 was quoted as follows: "The scarcity of reasonably satisfactory low rental houses is so great that the Health Department has not been able to take action to abate overcrowding except in the most extreme cases."

REPORT OF THE LIEUTENANT-GOVERNOR'S COMMITTEE ON HOUSING CONDITIONS IN TORONTO, 1934

The conclusions of this Committee are of particular significance since they apply to a city which, judged by the results of statistical tests, is one of the best housed in the Dominion. The Committee sums up the findings of its survey as follows:—

"Our survey of Toronto's housing conditions reveals that there are thousands of families living in houses which are unsanitary, verminous and grossly overcrowded. The Committee confidently estimates that the number of dwellings for which these and other reasons constitute a definite menace to the health and decency of the occupants is certainly not less than 2,000 and may be more than 3,000. In addition, there are probably half as many houses again which, while not in the same sense menacing, nevertheless lack the elementary amenities of life."

"Not only were bad housing conditions discovered, but the presence of a serious housing shortage was also detected. A surplus of households is at present absorbed by doubling-up and overcrowding. If reasonably full employment were to return and marriages delayed by depression were to take place, it is probable that a shortage of some 25,000 dwelling units would become apparent."

"The community is responsible, we believe, for the provision of satisfactory dwellings for those who are too poor to afford them."

REPORT ON A HOUSING SURVEY OF CERTAIN SELECTED DISTRICTS, 1934

BY THE HEALTH DEPARTMENT OF THE CITY OF WINNIPEG

The districts surveyed comprising 371 acres amounted to approximately one-fortieth of the City's superficial area. These districts were chosen because of the visible unsatisfactory housing conditions existing. The data relating to plumbing fixtures as shown in Table 31 of the Report are of particular interest.

PLUMBING FIXTURES—ALL HOUSES

Item	Total	District 1	District 2	District 3	District 4
Average families to—					
Water closet	1·93	2·74	2·09	1·64	1·28
Sink	1·79	2·72	2·03	1·29	1·15
Bath	3·10	3·04	2·54	4·91	1·93
Wash basin	3·85	3·17	2·80	6·69	2·75
Average persons to—					
Water closet	7·25	9·18	7·63	6·46	5·75
Sink	6·70	9·14	7·38	5·10	5·18
Bath	11·86	10·19	9·26	19·29	8·70
Wash basin	14·86	10·62	10·21	26·28	12·33

Summarizing its findings the Chief Housing Inspector says:—

"This survey shows once more that there are far too many families crowded together in houses that were originally designed and constructed for one family without any attempt being made to provide proper accommodation for additional families. The crowding together of families in these illegal tenements, where privacy and individual family life cannot obtain, is far from desirable. There is more wear and tear in evidence in such premises; the occupants are inclined to become careless in their habits; the plumbing fixtures are more liable to get out of order; the walls and ceilings become soiled from the use of gas ranges and coal stoves; and the whole premises often present an aspect that points to a neglect of elementary principles of sanitation. . There is usually no means for carrying off the products of combustion and the odours of cooking, this being most in evidence during the winter when the storm sashes are in position.

"In housing conditions such as those referred to, the children appear to suffer most and when communicable disease enters such premises, it is difficult to control the spread."

Although emphasis differed in these reports, a common strain was apparent in all of them. Unsatisfactory accommodation was prevalent and there existed a serious shortage of low-rent dwellings with modern conveniences. As will be demonstrated in a later section on the adequacy of accommodation, the cities referred to in these excerpts compare favourably with others in the Dominion. There can be no doubt, therefore, of the widespread existence of unsatisfactory housing conditions. They were recognized implicitly by the Federal Government in 1935, when a special Parliamentary Committee on Housing was appointed to "report upon the inauguration of a national policy of house building to include the construction, reconstruction and repair of urban and rural dwelling houses in order to provide employment throughout Canada, and also to provide such dwelling houses as may be necessary; upon such terms and conditions as may be best adapted to the needs and requirements of the people, having regard to the cost of such a policy and the burden to be imposed upon the treasury of Canada."

The subsequent recommendations of the Committee favouring financial support to new housing and rehabilitation projects are probably less significant than some of its conclusions which number seventeen in all. They include the following:—

"3. A national emergency will soon develop unless the building of dwellings be greatly increased.

"4. The formation, institution and pursuit of a policy of adequate housing should be accepted as a social responsibility.

"5. There is no apparent prospect of the low rental housing need being met through unaided private enterprise building for profit.

"13. The slum areas which have been shown to cast very heavy expenses on many branches of public administration such as health, welfare, fire prevention, administration of justice, etc., may justify public assistance, which is likely to prove as sound financially as it is certainly desirable socially."

Considerable supporting evidence is presented in favour of this last-mentioned conclusion.

The report of the Ganong Parliamentary Committee quoted above was followed almost immediately by Federal legislation. The Dominion Government established a fund of $10,000,000

under the Dominion Housing Act of 1935 to provide more attractive loan rates to prospective builders and also agreed to underwrite a large portion of the risk to private loaning organizations making funds available for rehabilitation and modernization. This aid differed from that extended in 1920 in that it was offered predominantly through the ordinary lending channels and not through municipal authorities. Under the 1935 plan the loan applicant provided one-fifth of the necessary building capital, the Dominion Government another fifth, and the loan organization the residual three-fifths. Loans were granted at the rate of 5 p.c. although the Dominion furnished its fifth to the loan companies on a 3 p.c. basis. Amortization payments covered a ten-year period and builders were required to meet detailed construction specifications drawn up by the Dominion Government.

Modernization or home improvement plan loans were not initiated until November, 1936. The chartered banks finance these loans and allow borrowers up to $2,000 at a discount rate of 3¼ p.c. for as long as five years. No collateral or note endorsation is required and the uses to which the money may be applied cover a wide range of improvements. The Dominion Government has guaranteed bank losses up to 15 p.c. of the aggregate amounts loaned.

In August, 1938, the National Housing Act replaced the Dominion Housing Act of 1935. The new measure contained three sections dealing with different aspects of the housing problem. The first section was designed to extend the field of ownership, particularly in low income brackets, and provided a total of $20,000,000 less the amount advanced under the 1935 Act to cover new loans and possible losses. The second section provided for a further $30,000,000 for loans in aid of low rental housing projects. The third section was calculated to relieve the builders of new homes between June 1, 1938, and December 1, 1940, of a portion of municipal taxation during the first three years their homes are taxed; 100 p.c. the first year; 50 p.c. the second; and 25 p.c. the third. These obligations would be assumed by the Federal Government. By the end of 1938 there had not been sufficient time to test Sections II and III of the new Act, but a marked acceleration in loans under Section I was apparent.

The demand for loans under the Dominion Housing Act for 1935 was of disappointing proportions. One reason for the indifferent response appeared to be associated with the risk borne by loan companies which were required to furnish approximately the same proportion of requisite funds as is usually extended on first mortgages at considerably higher interest rates. Total loans in 1936, the first complete year the new Act was in force, amounted to $4,444,778 and covered only 934 dwelling units. However, in 1937 this figure was nearly doubled and the 1938 total exceeded $14,600,000. The immediate response to the National Housing Act in 1938 is indicated by the fact that over $6,500,000 was loaned during the last five months of the year when it was in operation, as compared with less than $3,200,000 during the same months of 1937. According to the Dominion Director of Housing, operations under the National Housing Act in 1938 showed an increase of 103 p.c. in number of loans, 140 p.c. in number of family units financed, and 105 p.c. in the amount of housing act loans compared with the same period of the previous year. It is of some significance also that the average size of loans has tended to decrease under the National Housing Act, indicating that this legislation is effective in assisting the prospective home owner of moderate means. One-quarter of the loans made under the National Housing Act in 1938 was for amounts ranging between $2,500 and $3,000, while approximately four-fifths of these loans were for less than $4,000. Considerable progress was made during 1938 in extending loan facilities to new communities. The total number of communities in which loans had been approved in December 1938 was 293 as compared with 169 in the preceding December and 83 in December 1936.

Loans made under the Home Improvement Plan reached a peak slightly in excess of $12,000,000 in 1937. This aggregate represented 30,772 loans. In 1938 there was a slight decline to 28,077 loans totalling approximately $11,500,000. It seems probable that the National Housing Act may contribute materially to the relief of the shortage of home accommodation for families with a steady income of average proportions or better. It is also possible that Section II of the Act may relieve the congestion among tenant families in the lower income brackets. Its effectiveness in this field remains to be tested when enabling provincial legislation has been put into operation. Four of the nine provinces had passed or were considering such legislation in 1939 but, generally speaking, the record of provincial and municipal efforts has not been impressive.

In Nova Scotia, a Housing Commission was formed by the Provincial Government in 1932 and it was subsequently granted a sum of $200,000 to loan on first mortgage to housing companies. According to its terms of reference, the Commission's principal work was to encourage the formation of building companies. Efforts made to obtain municipal tax concessions for dwellings erected by these companies have met with only partial success. More encouraging results have been obtained at Tompkinsville, N.S., where the co-operative principle was applied with outstanding success. Under provisions of the 1932 Act, ten miners built the first homes of this community under expert guidance after careful study of the possibilities which were afforded. The Provincial Housing Commission loaned each man $1,500 and agreed to value his labour applied to the building of the new home at $450. The ten new homes were erected for a cash outlay of $100 on the part of each man. The cost per home was $2,000 for land and building and, as the result of municipal tax concessions, total maintenance costs, including $2 for a reserve fund, amounted to $11.66 per month. In the words of Miss Mary E. Arnold who played a major part in the planning of the project—"These houses are not what might be termed 'workingmen's houses.' They are real houses with large basements, 10-inch concrete walls, hardwood floors, three bedrooms, and well appointed bathroom. In addition, each has an acre of land for subsistence farming."*

A Housing Commission for the City of Saint John formed about the same time under provincial jurisdiction did some preliminary survey work but was unable to proceed for lack of financial support.

The City of Toronto, subsequent to the Lieutenant-Governor's Report of 1934, enacted a by-law in 1936 defining standards of decency, health and safety, and giving officials power to inspect and condemn sub-standard dwellings. It also provided for rehabilitation loans of up to $50 per room at 5 p.c. to owners unable to pay cash for needed repairs. These loans might cover as long a period as ten years. An experiment of the Ontario Government involving the building of low cost model homes under housing relief programmes was unsuccessful and was dropped in 1937 after a year's trial. The principal difficulty appeared to be that of meeting standards set by the Provincial Government at specified low costs.

The formation of the Winnipeg Housing Company in 1937 provided an example of an attempt to interest private capital in a project to build low cost homes. Although much publicized, the efforts of this concern met with disappointing results.

Municipal regulations setting minimum standards of health and decency have long been in force in practically all Canadian cities and building inspectors form a generally accepted unit of civic administrative staffs. Earlier citations from housing reports indicate, however, that efforts to demolish unsatisfactory dwellings are frequently unsuccessful due partly to resistance from property owners but possibly to an even greater extent to lack of suitable alternate housing accommodation.

* Ottawa Morning Journal—Canadian Press—February 21, 1939—p. 1.

DEFINITIONS

Before proceeding with the actual examination of 1931 housing records, definitions are given for some of the terms used. For a subject with which everyone has a fair degree of familiarity, housing presents a surprising lack of agreement regarding definitions. Differences occur even as to what constitutes the commoner types of dwellings such as an apartment or flat. The following definitions relating to dwellings and the family have been based upon 1931 Census instructions:—

1. **Dwelling House:** A place in which one or more persons regularly sleep. It need not be a house in the usual sense of the word, but may be a room in a factory, a store, a tent, a railway car, or the like. A building containing apartments or flats counts only as one dwelling house.

2. **Census Family:** The census family is more inclusive than the private family, which is usually associated by ties of kinship. The census family includes all persons living together as a self-contained household. Servants and lodgers sleeping in the same quarters with the private family constitute part of the census family. It is also referred to hereafter as a "household."

3. **The Home:** The living quarters of a census family. Structurally separate units such as a single house, one section of a semi-detached house, row, or terrace, a flat, an apartment, a tent, a section of a store, etc., may constitute a home.

4. **Single House:** A dwelling house designed specifically to provide living quarters for a single family.

5. **Semi-Detached House:** A dwelling containing two separate and distinct homes with separate entrances under one roof, with a partition wall running through it from cellar to attic and making of each part a complete home.

6. **Apartment House:** A dwelling house of two or more storeys divided into self-contained home units with separate individual entrances inside the building, and a common or sectional access to the street. Units in this type of house are referred to as apartments.

7. **Row or Terrace:** Similar to a semi-detached house, except that it contains three or more homes separated by partition walls from cellar to attic.

8. **Flat House:*** Differing from an apartment house in that each home usually has a separate street entrance. Units in this type of house are referred to as flats.

9. **Room:** Only rooms occupied for living purposes are included in census tabulations. This excludes storage space, attics, bathrooms, etc.

10. **Rent:** No distinction was made between rent for homes furnished or unfurnished, heated or unheated. Rent shown is that for the month of May.

11. **Value of the Owned Home:** The current or actual market value of homes.

12. **Earnings:** Total earnings for the twelve months ending May for persons with an occupation who worked for salary, wages, commission or at piece rates. No record of earnings or income was obtained from those working on their own account or whose income was derived only from investment. Earnings of private family members have been grouped together as the unit for earnings analysis.

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* Except in Chapter X dealing with a special survey, there is no use made of the term "duplex" which is popularly used to denote dwellings with two complete homes, one on the first and the other on the second storey. In the census this type of home is listed as a flat, although it is not typical of flats in general. The flat group is dominated by the Quebec type, which is a multiple-unit dwelling house similar to an apartment house, except that separate outside steps or staircases connect homes with the street.

13. **Median Earnings:** The amount of family earnings midway between the highest and lowest family earnings figures in the sample.

14. **Quartile Earnings:** First quartile value—the amount of family earnings midway between the lowest earnings and the median earnings value. Third quartile value—the amount of earnings midway between the median and highest earnings value reported. Median and quartile values divide the number of families into four equal groups.

15. **Inter-Quartile Range of Earnings:** The value obtained by subtracting the first earnings quartile from the third, *i.e.*, the range in which earnings for the middle 50 p.c. of families falls.

CHAPTER IV

DESCRIPTION OF CANADIAN HOMES

SIZE

Canadian census returns do not show the amount of floor space per home, so that the remarks which follow relate entirely to the number of rooms suitable for living purposes. As intimated in the list of definitions in the preceding section, only those rooms have been counted which provide actual living space. This excludes storage space, attics, bathrooms, etc. In the chapter on rentals reference is made to a supplementary investigation which includes estimates given by rental agents of floor space in workmen's dwellings.

Provincial, Rural-Urban and Owner-Tenant Comparisons of Rooms per Household.—Nearly 60 p.c. of all Canadian households in 1931 lived in homes ranging from four to seven rooms, while about 20 p.c. lived in less than four rooms and approximately the same proportion in eight rooms or more. The most representative number of rooms per household was six, 18·2 p.c. of Canada's 2,252,729 households being accommodated in homes of this size. This approximated the Dominion average of 5·6 rooms per household.

The widest differences in the typical number of rooms per home unit occurred in rural areas, where the average number of rooms ranged from 7·6 in Prince Edward Island to 3·7 in Alberta. The typical Maritime farm home of eight rooms was the largest in Canada, while Quebec and Ontario came next with six rooms. Homes of Prairie farmers were small, many including only one or two rooms, although their average number of rooms was somewhat higher. Rural averages for the Western Provinces were 4·4 for Manitoba, 4·0 for Saskatchewan, 3·7 for Alberta, and 4·1 for British Columbia.

Urban homes were generally larger than those in rural areas and differences between provinces were less marked. The Dominion average number of rooms per urban household was 5·8, slightly above the rural average of 5·5, although this margin was by no means uniformly maintained throughout the country. In fact, rural averages for the five Eastern Provinces were higher than corresponding urban averages but the balance in favour of urban households in Western Canada was sufficiently great to more than counterbalance the effect of Eastern figures in Dominion averages. The range in number of rooms per household was indicated by the provincial averages of 7·1 rooms per household for Prince Edward Island and 4·8 for Saskatchewan.

In the larger cities the typical number of rooms per household ranged from four to seven. The four-room home was characteristic of Quebec City and Verdun, in both of which the number of persons per family is unusually large. Four-room homes were also the most common type in Vancouver, accounting for 23·4 p.c. of the total. Homes of five and six rooms prevailed in the cities of the Maritimes, Montreal, the Province of Ontario and the Prairie Provinces. The proportion of one- and two-room homes seldom exceeded 5 p.c. except in Western cities where it ranged from 10 p.c. to 17 p.c. of the total. Homes of more than ten rooms formed less than 5 p.c. of the total in nearly all large cities.

Owned homes were consistently larger than rented homes in both rural and urban areas, the Dominion averages for 1931 being 6·1 and 5·0 rooms per household respectively. The difference was more marked in Maritime rural areas than in any other community. There, the average household in owned homes occupied nearly two more rooms than tenants. Elsewhere the variation usually amounted to slightly more than one room per household. (See Part II, Tables 1, 8 and 9.)

Summary.—A few of the facts outlined above appear worthy of some comment. The most noticeable of these is the decided difference in the typical number of rooms comprising rural homes on the Prairies and in Eastern Canada. The smaller Prairie dwellings doubtless are associated with the relatively short time the Western Provinces have been settled. This view is supported by the fact that Manitoba, created in 1870, has a lower percentage of small homes

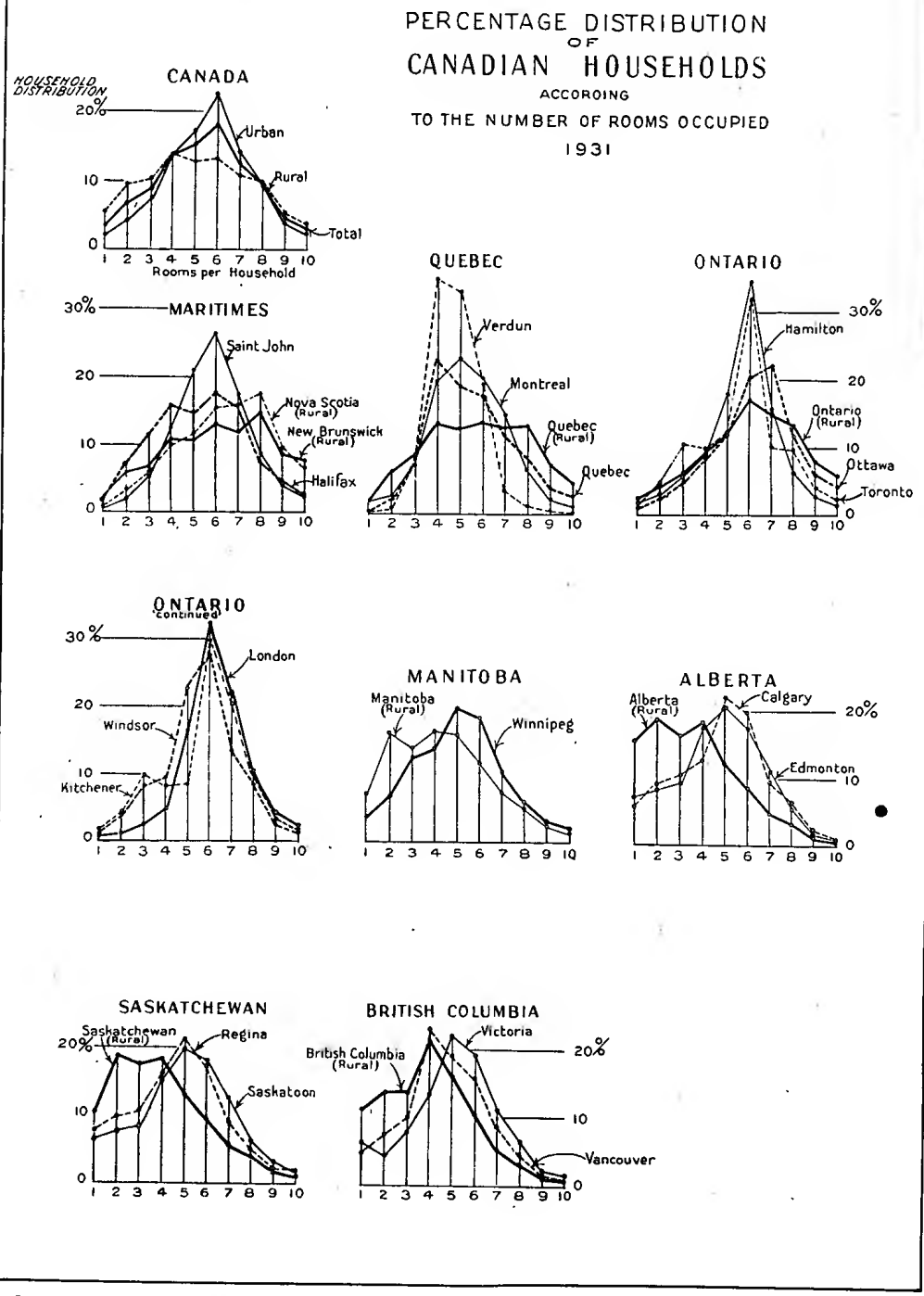

PERCENTAGE DISTRIBUTION
OF
CANADIAN HOUSEHOLDS
ACCORDING
TO THE NUMBER OF ROOMS OCCUPIED
1931
CANADA
HOUSEHOLD DISTRIBUTION
20%
10
0
Urban
Rural
Total
1 2 3 4 5 6 7 8 9 10
Rooms per Household
MARITIMES
30%
20
10
0
Saint John
Nova Scotia (Rural)
New Brunswick (Rural)
Halifax
QUEBEC
Verdun
Montreal
Quebec (Rural)
Quebec
ONTARIO
30%
20
10
0
Hamilton
Ontario (Rural)
Ottawa
Toronto
ONTARIO (continued)
30%
20
10
0
London
Windsor
Kitchener
MANITOBA
Manitoba (Rural)
Winnipeg
ALBERTA
Alberta (Rural)
Calgary
Edmonton
20%
10
0
SASKATCHEWAN
Saskatchewan (Rural)
20%
10
0
Regina
Saskatoon
BRITISH COLUMBIA
British Columbia (Rural)
Victoria
Vancouver
20%
10
0

Chart 1

than have Saskatchewan and Alberta. The accessibility and cost of building materials is another factor which appears to have exerted a considerable influence. In British Columbia, for instance, where lumber is plentiful, rural homes average as many rooms as do urban dwellings. It is possible also that the different types of farming carried on in the West may have a bearing upon the size of the household and indirectly upon the size of the home. This possibility is considered later in the section devoted to the adequacy of accommodation.

A second point of interest is the greater amount of rigidity in the number of rooms in homes of Eastern cities than in those of the West. The pronounced concentration around six rooms in Ontario and Saint John, N.B., and around four and five rooms in Quebec, is not present to nearly the same extent in Western cities. There is, in addition, greater elasticity in the number of rooms in rural homes generally than in urban homes. These differences may be seen at a glance from Chart 1 which follows.

MATERIALS OF CONSTRUCTION

Factors Affecting Choice of Materials.—Differences in kinds of building materials used throughout Canada appear to have depended primarily upon the types most readily available and to a lesser extent upon economic development, the growth of income and costly experience. For example, fire disasters in Eastern Canada in the days before fire fighting equipment had been developed to a state of comparative efficiency appear to have played a part in creating a preference for brick, even where wood was plentiful. The prevalence of brick clay in Ontario and Quebec made it relatively easy to satisfy this preference in these provinces. The greatest growth in Western Canada came after the development of fire fighting equipment and, despite the extensive use of wood as a building material, fire catastrophes have been relatively infrequent in that part of the country. The Prairie Provinces have been dependent more than any other part of Canada upon the importation of materials, and building costs there have been relatively high. Since lumber is cheaper than brick and easier to transport, frame houses are most common in this area. The rapidly increasing use in Prairie cities of stucco, which gives a pleasing appearance particularly when combined with brick trimming, has tended to reduce fire hazards without raising building costs unduly. The Maritime Provinces and British Columbia with ample supplies of good building lumber have continued to maintain this material in a predominant position among building requisites. Although building stone is found in considerable quantities in various parts of Canada, it is more difficult to handle than brick and has been used relatively less since 1900 than when the manufacture of brick was in its earlier stages of development.

Regional Differences in Typical Materials.—A record of the principal construction materials used for building houses in Canada was first made in 1861 for Upper and Lower Canada. An idea of the relative states of development in the two provinces at that time is given by the proportion of homes built of logs. In Lower Canada there were less than 18,000 log houses out of a total of over 155,000, while in Upper Canada over 103,000 out of nearly 219,000 were built of logs. There were approximately 20,000 homes of brick or stone in each of the provinces at this time, the remainder being of frame construction. By 1891, the log group had been dropped from the census classification of materials, indicating the virtual disappearance of this type of dwelling in settled areas, although the log cabin was still common in outlying districts. From 1891 to 1931 the proportion of frame to brick and stone dwellings in Ontario changed gradually from about 3 : 1 to almost 1 : 1. In Quebec, the ratio dropped from approximately 3 : 1 to 2 : 1. Frame dwellings in other parts of Canada, however, have maintained a wide margin over other types. In 1931, over 95 p.c. of Maritime homes were of frame construction and the number of brick dwellings was actually less than it had been ten years earlier. On the Prairies and the Pacific coast, wood has also continued to be by far the most important building material. Since 1921, however, there has been a marked increase in the use of stucco in surfacing frame structures in cities of the Prairie Provinces, and in new suburban areas this kind of dwelling is particularly common.

Over 86 p.c. of rural Canadian homes were of frame construction in 1931, and this proportion would exceed 95 p.c. if Ontario were excluded. In that province 65 p.c. of the homes were built of wood, with 26 p.c. of brick and 9 p.c. of stone, concrete, etc. Except for Quebec and Manitoba with 8 p.c. and 6 p.c. respectively of brick, stone and concrete, the proportion of frame dwellings in rural parts of other provinces was above 95 p.c.

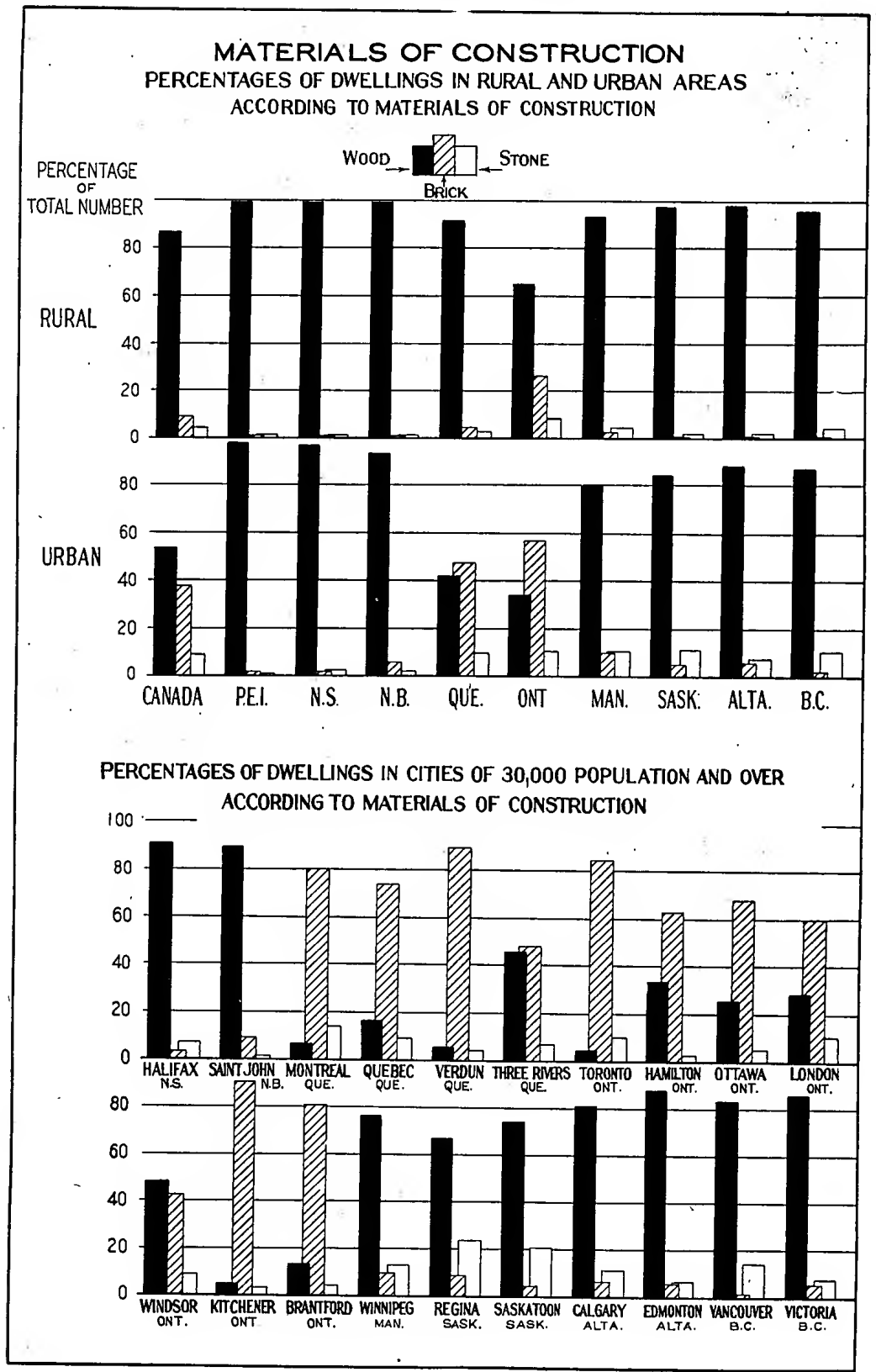

MATERIALS OF CONSTRUCTION
PERCENTAGES OF DWELLINGS IN RURAL AND URBAN AREAS
ACCORDING TO MATERIALS OF CONSTRUCTION
WOOD
STONE
BRICK
PERCENTAGE OF TOTAL NUMBER
RURAL
URBAN
0
20
40
60
80
CANADA
P.E.I.
N.S.
N.B.
QUE.
ONT
MAN.
SASK.
ALTA.
B.C.
PERCENTAGES OF DWELLINGS IN CITIES OF 30,000 POPULATION AND OVER
ACCORDING TO MATERIALS OF CONSTRUCTION
100
HALIFAX N.S.
SAINT JOHN N.B.
MONTREAL QUE.
QUEBEC QUE.
VERDUN QUE.
THREE RIVERS QUE.
TORONTO ONT.
HAMILTON ONT.
OTTAWA ONT.
LONDON ONT.
WINDSOR ONT.
KITCHENER ONT
BRANTFORD ONT.
WINNIPEG MAN.
REGINA SASK.
SASKATOON SASK.
CALGARY ALTA.
EDMONTON ALTA.
VANCOUVER B.C.
VICTORIA B.C.

Chart 2

Much wider variations between the different materials used in construction occurred in urban areas, particularly in the larger centres. In cities of over 30,000, the proportion of frame dwellings ranged from 4·9 p.c. in Toronto to 90·6 p.c. in Halifax. Wood was characteristic of the Maritime Provinces, while brick and stone were prevalent in Quebec and Ontario. The highest proportion of wood structure in Ontario cities of over 30,000 was 48·1 p.c. for Windsor, with the majority of the other cities having well under 30 p.c. Brick percentages, on the other hand, varied from 22 to 87 and averaged well over 60. In cities of the four Western Provinces the proportion of frame dwellings ranged from 67·4 p.c. in Regina to 88·1 p.c. in Edmonton. The number of brick homes in this area ranged from 1·8 p.c. in Vancouver to 10·0 in Winnipeg, while in the stone and concrete group, composed mainly of stucco finished homes, percentages were as high as 23·5 for Regina and as low as 6·1 for Edmonton. (See Part II, Tables 2 and 3.)

TYPES OF DWELLINGS

Proportions of Various Types.—Despite the growing favour of multiple-unit dwellings in urban areas, the single house still accommodates by far the largest part of Canada's population. According to the 1931 Census, 96 p.c. of rural and 59 p.c. of urban households lived in this type of home. Of the remaining number of urban households, flats and apartments accommodated 26 p.c., semi-detached houses 11 p.c., rows or terraces 3 p.c., and hotels and rooming houses less than 1 p.c. The largest proportion of the residual number of rural households lived in semi-detached houses, and for something less than 1 p.c. of households the type of dwelling was not reported. The overwhelming preponderance of single houses in rural areas makes a detailed geographical examination of the distribution of different types unnecessary. In urban communities, however, considerable differences occurred. With the exception of Quebec, the single house occupied the leading position in urban dwellings also. In other provinces, between 51 p.c. (New Brunswick) and 89 p.c. (Saskatchewan) of urban households lived in single houses. The percentage was over 77 in all of the four Western Provinces, close to 70 in Prince Edward Island and Nova Scotia, 66 in Ontario, 51 in New Brunswick and 27 in Quebec. Quebec cities of over 30,000 ranged still lower, from 21 p.c. for Three Rivers to 3 p.c. for Verdun.

Flats in multiple-unit dwellings with private staircases connecting the entrances with the street are a feature of Quebec and New Brunswick cities, although not common in other provinces. This kind of dwelling formed a major proportion of apartments and flats in these areas. Of total urban households, apartments and flats accommodated 94 p.c. in Verdun, 86 p.c. in Montreal, 78 p.c. in Saint John, 62 p.c. in Quebec City and 55 p.c. in Three Rivers. In other provinces, the more usual type of apartment is reached from a single or sectional street door by means of common hallways and staircases leading to individual entrances. Excepting Halifax with 29 p.c., Windsor with 25 p.c., Ottawa with 23 p.c. and Winnipeg with 21 p.c. of households in this kind of home, apartments and flats were relatively unimportant, although corresponding percentages exceeded 15 in the cases of Vancouver, Victoria, Calgary and Regina.

Semi-detached houses in 1931 were important only in a limited number of Eastern cities. They were unusually numerous in Toronto, where 43 p.c. of all households lived in them. Other cities in which more than 10 p.c. of households lived in semi-detached houses were: Ottawa 17 p.c., Three Rivers 16 p.c., Quebec 16 p.c., Hamilton 13 p.c. and Halifax 12 p.c.

Other kinds of dwellings were relatively few in number. Except for Ottawa, with 13 p.c of households in rows or terraces, no other city of over 30,000 accommodated more than 10 p.c. in this type of home. The number of households in hotels and rooming houses was less than 1 p.c. of the total in any city of over 30,000 population. (See Part II, Tables 4, 5 and 6.)

Before proceeding to other aspects of dwelling types, it should be noted that the conventional apartment building has increased in favour during the post-War period, particularly in the large cities. Distance, involving considerable cost of transportation and loss of time, has acted as a curb upon residence in the more outlying suburban districts. On the other hand, modern centrally located accommodation is possible at reasonable rental costs only in the multiple-unit type of dwelling with its reduction per household in the cost of building sites, as well as savings from heat, refrigeration and service supplied from central units. These factors in addition to the comfort and modern equipment provided by apartment residence have led to the increase in this type of dwelling.

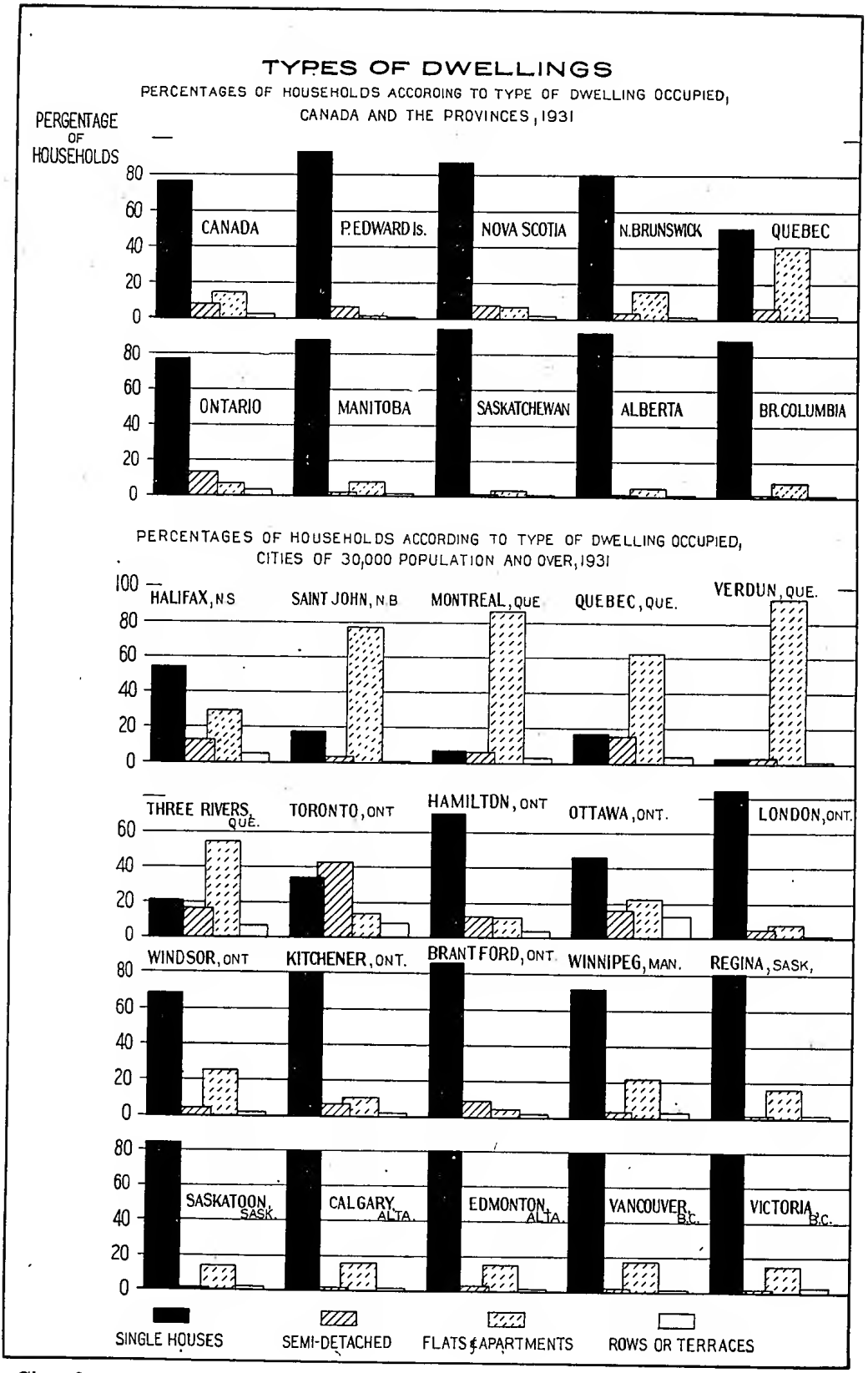

TYPES OF DWELLINGS
PERCENTAGES OF HOUSEHOLDS ACCORDING TO TYPE OF DWELLING OCCUPIED, CANADA AND THE PROVINCES, 1931
PERGENTAGE OF HOUSEHOLDS
CANADA
P.EDWARD Is.
NOVA SCOTIA
N.BRUNSWICK
QUEBEC
ONTARIO
MANITOBA
SASKATCHEWAN
ALBERTA
BR.COLUMBIA
PERCENTAGES OF HOUSEHOLDS ACCORDING TO TYPE OF DWELLING OCCUPIED, CITIES OF 30,000 POPULATION AND OVER, 1931
HALIFAX, N.S.
SAINT JOHN, N.B.
MONTREAL, QUE.
QUEBEC, QUE.
VERDUN, QUE.
THREE RIVERS, QUE.
TORONTO, ONT.
HAMILTON, ONT.
OTTAWA, ONT.
LONDON, ONT.
WINDSOR, ONT.
KITCHENER, ONT.
BRANTFORD, ONT.
WINNIPEG, MAN.
REGINA, SASK.
SASKATOON, SASK.
CALGARY, ALTA.
EDMONTON, ALTA.
VANCOUVER, B.C.
VICTORIA, B.C.
SINGLE HOUSES
SEMI-DETACHED
FLATS & APARTMENTS
ROWS OR TERRACES

Chart 3

Building Ratios of Apartments to Total Dwellings.—No census comparison between the the number of multiple-unit dwellings in 1921 and 1931 is possible due to changed methods of census compilation. However, an examination has been made extending back to 1921, of the total value of residential and apartment building contracts awarded in Canada. From these data an index was constructed showing the changing ratio of apartment to total residential building throughout Canada during the years 1922 to 1939, inclusive. This relationship is indicated in the third column of the following statement and was obtained by dividing the value of apartment contracts awarded in each year by the corresponding figure for total residential building awards.

VALUE OF CANADIAN RESIDENTIAL AND APARTMENT BUILDING CONTRACTS[1], 1922-1938

Year	Value of Building Contracts		Ratio of Apartment to Total Residential
	Total Residential	Apartment	
	$	$	
1922	104,201,500	4,342,700	4·2
1023	97,645,200	8,818,600	9·0
1024	91,224,800	9,797,400	10·7
1025	96,489,900	12,723,600	13·2
1026	109,562,400	20,979,300	19·2
1927	124,939,600	25,981,800	20·8
1928	139,166,300	36,720,500	20·4
1929	128,901,300	22,527,200	17·5
1930	93,291,500	15,330,300	16·4
1031	81,684,300	16,202,200	19·8
1932	28,892,600	1,536,000	5·3
1933	23,929,800	903,900	3·8
1034	30,588,100	1,641,900	5·4
1935	36,408,500	3,249,600	8·9
1936	42,857,900	3,921,100	9·2
1937	56,207,000	5,815,100	10·3
1938	55,025,600	7,807,900	14·2
1039	67,451,200	9,829,000	14·0

[1] Data from Maclean Building Reports Ltd.

It will be noted that in 1928 the value of apartment awards was more than a quarter of total residential building, although it had been only an inconsequential fraction in 1922. During the decline in building in the succeeding five years, the relative importance of apartment building decreased, with definite recovery discernible from 1933 to 1938. These figures are of additional interest in that they reveal the degree of subnormality in residential building during the depression years. Declining prices of materials and labour account for only a small percentage of the shrinkage during this period. The reduced amount of new accommodation could not have been nearly sufficient to house the natural increase in population.

Rooms per Dwelling in Relation to Type.—A definite relationship was revealed by the 1931 Census between the type and average number of rooms per dwelling unit. Single houses showed a consistently larger number of rooms per household than other types of dwellings in seven out of the nine provinces and in 16 of the 20 cities of over 30,000. Semi-detached houses, except in Alberta and Saskatchewan were slightly smaller than single houses. Rows or terraces, with the exception of those in Quebec and Saskatchewan, and the City of Edmonton, came next in point of size, while apartments and flats followed at the end of the list. In the West the average size of this last group is less than in the East where the occurrence of the flat type of dwelling raises the average number of rooms per household above that generally typical of apartment houses. There is a clear division between Eastern and Western areas in the average number of rooms in all four types of dwellings as shown from the following figures, summarizing the range of variation.

RANGE OF VARIATION IN AVERAGE NUMBER OF ROOMS PER HOUSEHOLD, 1931

Type of Dwelling	Eastern Provinces	Western Provinces
Single	6·4 (Que.) — 7·7 (P.E.I.)	4·2 (Alta.) — 4·9 (Man.)
Semi-detached	5·6 (N.S.) — 6·5 (P.E.I.)	4·4 (B.C.) — 4·8 (Man.)
Row or terrace	5·2 (N.S.) — 6·3 (P.E.I. and Que.)	3·5 (Alta.) — 4·8 (Sask.)
Apartment or flat	4·2 (Ont.) — 5·7 (N.B.)	2·7 (Alta.) — 3·5 (Man.)

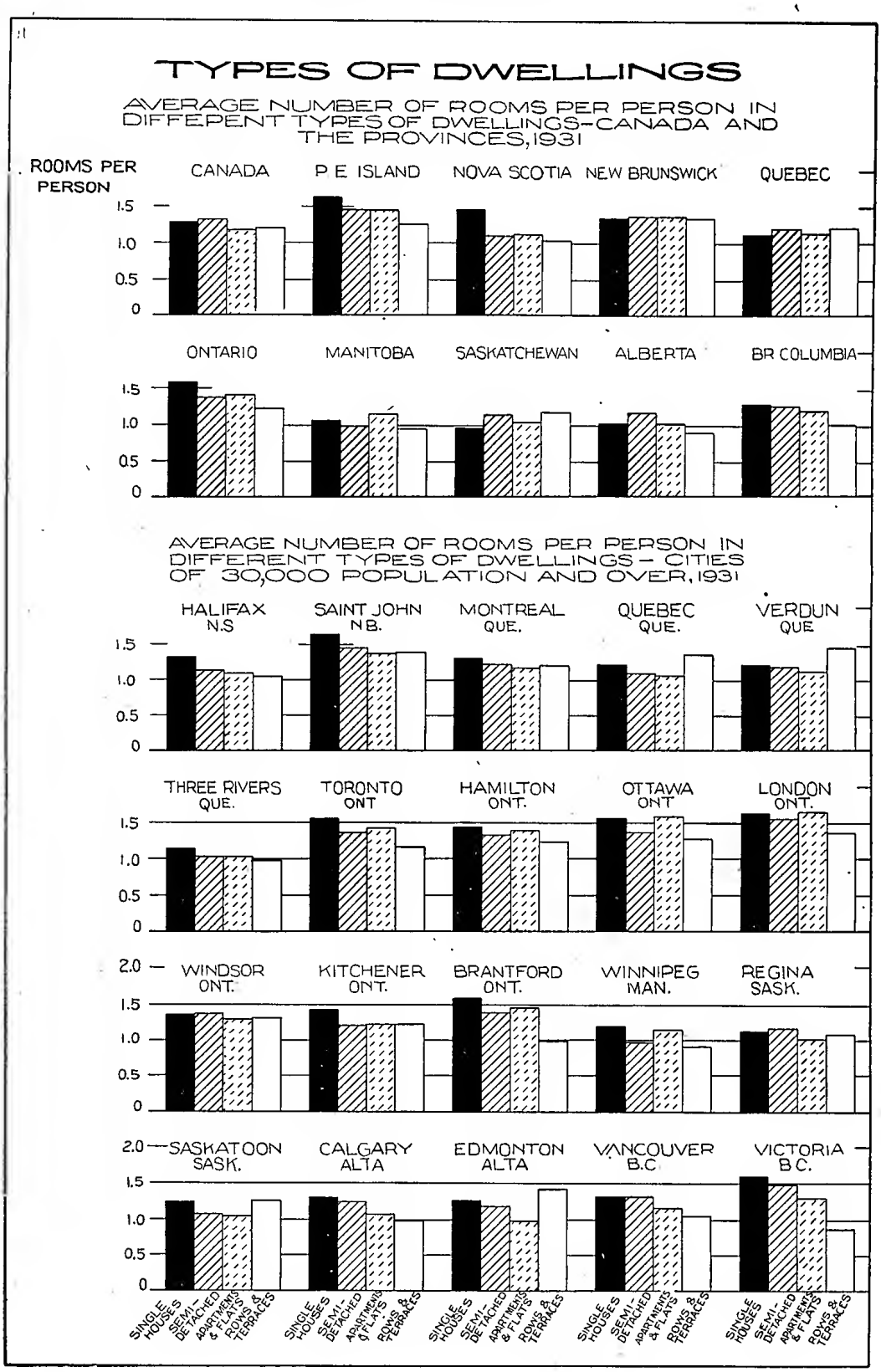

TYPES OF DWELLINGS
AVERAGE NUMBER OF ROOMS PER PERSON IN DIFFEPENT TYPES OF DWELLINGS-CANADA AND THE PROVINCES, 1931
ROOMS PER PERSON
CANADA
P E ISLAND
NOVA SCOTIA
NEW BRUNSWICK
QUEBEC
ONTARIO
MANITOBA
SASKATCHEWAN
ALBERTA
BR COLUMBIA
AVERAGE NUMBER OF ROOMS PER PERSON IN DIFFERENT TYPES OF DWELLINGS - CITIES OF 30,000 POPULATION AND OVER, 1931
HALIFAX N.S
SAINT JOHN N.B.
MONTREAL QUE.
QUEBEC QUE.
VERDUN QUE
THREE RIVERS QUE.
TORONTO ONT
HAMILTON ONT.
OTTAWA ONT
LONDON ONT.
WINDSOR ONT.
KITCHENER ONT.
BRANTFORD ONT.
WINNIPEG MAN.
REGINA SASK.
SASKATOON SASK.
CALGARY ALTA
EDMONTON ALTA
VANCOUVER B.C
VICTORIA B.C.
SINGLE HOUSES
SEMI-DETACHED
APARTMENTS & FLATS
ROWS & TERRACES

Chart 4

Manitoba is the only one of the Western Provinces showing an average of more than three rooms for apartments and flats. In Ottawa, Quebec City and Saint John where the flat type of dwelling is popular, apartments and flats averaged from 4·8 to 5·7 rooms. Ottawa, the only city showing a considerable proportion of households living in rows or terraces, averaged 6·6 rooms for that type of dwelling. (See Part II, Table 7.)

Household Composition in Relation to Type of Dwelling.—The proportions of children and adults in different types of dwellings is of social significance when considered in relation to building trends. The growing popularity of apartment dwellings in the past decade and a half has already been noted although, as the 1931 Census showed, this type of home still forms but a small fraction of the urban total.

The relationship between the number of children and the total number of persons in households living in the four main types of dwellings is shown in the following statement.

NUMBER OF CHILDREN[1] AS PERCENTAGE OF TOTAL NUMBER OF PERSONS IN HOUSEHOLDS IN SPECIFIED TYPES OF DWELLINGS, 1931

Province or City	Single Houses	Semi-Detached Houses	Apartments and Flats	Rows or Terraces
	p.c.	p.c.	p.c.	p.c.
CANADA	51·1	47·5	47·7	46·8
Prince Edward Island	50·5	49·8	34·0	51·7
Nova Scotia	51·1	55·1	46·7	53·6
New Brunswick	54·9	50·3	47·4	51·5
Quebec	60·2	53·5	51·6	49·3
Ontario	46·3	44·7	33·9	46·4
Manitoba	51·7	46·6	34·1	41·3
Saskatchewan	53·2	44·9	32·6	44·4
Alberta	50·2	42·6	33·7	46·5
British Columbia	43·6	39·8	29·9	30·3
Cities of 30,000 population and over—				
Halifax, N.S.	47·6	49·2	45·6	52·8
Saint John, N.B.	45·5	48·9	47·8	50·7
Montreal, Que.	51·4	51·9	50·5	45·8
Quebec, Que.	56·6	57·4	56·1	50·8
Verdun, Que.	53·3	54·5	49·4	48·1
Three Rivers, Que.	58·6	59·7	56·9	61·2
Toronto, Ont.	41·8	43·3	31·6	44·9
Hamilton, Ont.	44·7	45·1	31·5	47·1
Ottawa, Ont.	48·1	52·4	35·6	51·6
London, Ont.	42·8	38·7	27·8	38·7
Windsor, Ont.	46·8	44·6	35·9	41·5
Kitchener, Ont.	46·1	49·0	32·0	41·9
Brantford, Ont.	44·2	44·6	30·5	45·7
Winnipeg, Man.	47·1	43·5	32·5	39·0
Regina, Sask.	46·6	45·4	30·0	43·2
Saskatoon, Sask.	46·5	39·6	28·8	41·9
Calgary, Alta.	44·4	39·5	32·1	38·8
Edmonton, Alta.	47·3	42·0	31·3	41·5
Vancouver, B.C.	43·4	36·5	29·9	32·6
Victoria, B.C.	41·8	38·0	27·3	21·6

[1] Calculated on basis of one-family households of two or more persons. Includes children of all ages.

Children formed 51·1 p.c. of the average Canadian household living in single houses in 1931. Provincial percentages were subject to appreciable variations ranging from 60·2 for Quebec to 43·6 for British Columbia, although for the remaining provinces averages differed by no more than ·5 p.c. from the Dominion figure. In cities of over 30,000, roughly the same range occurred, as indicated by a maximum of 58·6 p.c. for Three Rivers and a minimum of 41·8 p.c. for Toronto and Victoria. Apart from Quebec cities, which were noticeably above average in this respect, other urban centres tended to concentrate around 45 p.c.

In the case of households living in semi-detached houses and rows or terraces, there were only minor differences in the average proportion of children per household. Taking Canada as a whole it was 47·5 p.c. for semi-detached houses and 46·8 p.c. for rows and terraces, while the degree of scatter about these averages was about the same as for single houses. The British Columbia percentage of 30·3 for rows and terraces was the one noteworthy exception to this statement.

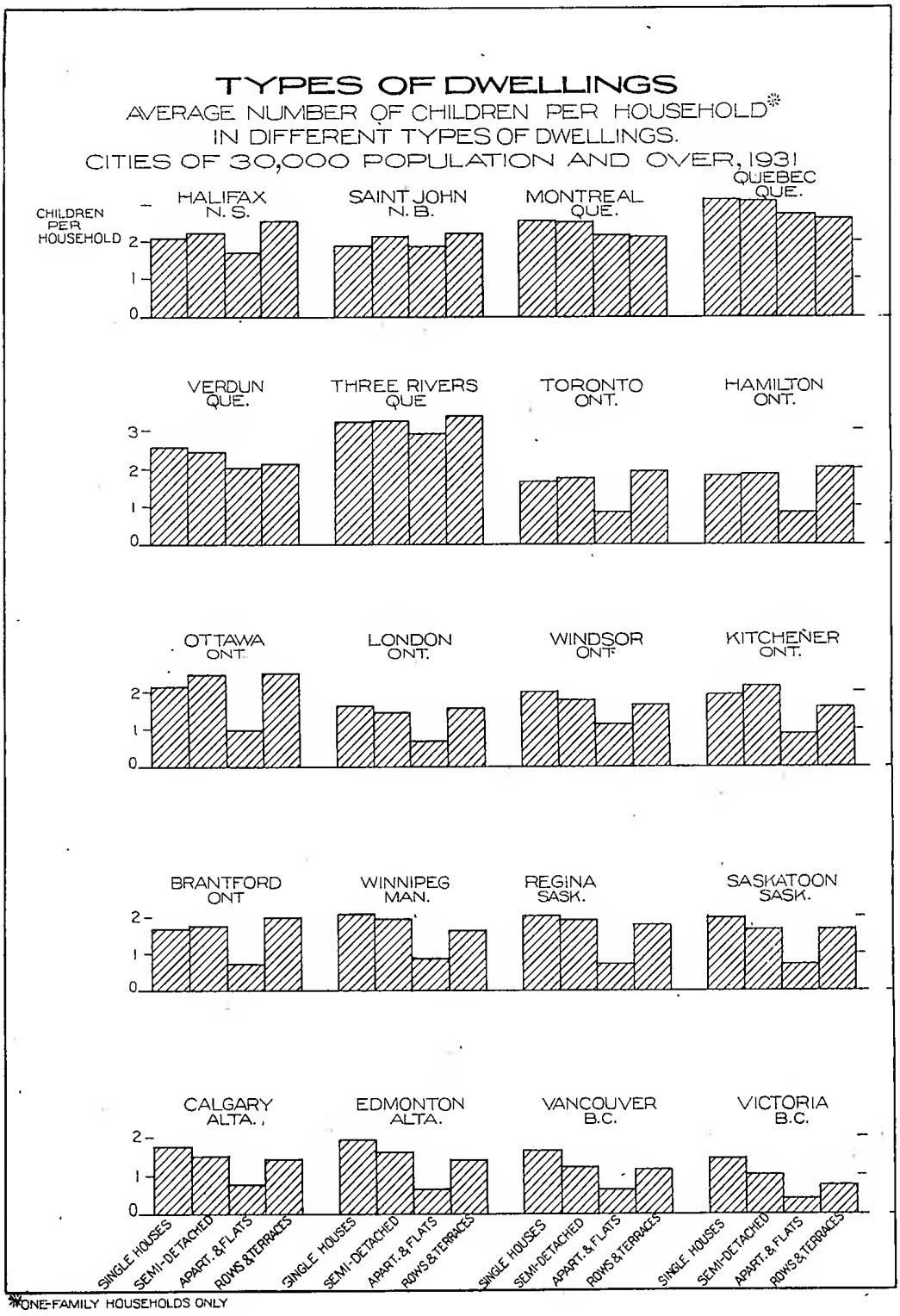

TYPES OF DWELLINGS
AVERAGE NUMBER OF CHILDREN PER HOUSEHOLD*
IN DIFFERENT TYPES OF DWELLINGS.
CITIES OF 30,000 POPULATION AND OVER, 1931
CHILDREN PER HOUSEHOLD
HALIFAX N. S.
SAINT JOHN N. B.
MONTREAL QUE.
QUEBEC QUE.
VERDUN QUE.
THREE RIVERS QUE
TORONTO ONT.
HAMILTON ONT.
OTTAWA ONT.
LONDON ONT.
WINDSOR ONT.
KITCHENER ONT.
BRANTFORD ONT
WINNIPEG MAN.
REGINA SASK.
SASKATOON SASK.
CALGARY ALTA.,
EDMONTON ALTA.
VANCOUVER B.C.
VICTORIA B.C.
SINGLE HOUSES
SEMI-DETACHED
APART. & FLATS
ROWS & TERRACES
*ONE-FAMILY HOUSEHOLDS ONLY

Chart 5

Although the Canadian average for apartments and flats showed 47·7 p.c. of household members in this type of dwelling to be children, the figure is greatly influenced by the Quebec average of 51·6 p.c. As already noted, Quebec urban households are housed predominantly in this kind of dwelling and they form about two-thirds of all Canadian households living in flats and apartments. The range of averages for other provinces varied from 47·4 p.c. for New Brunswick to 29·9 p.c. for British Columbia. In Prince Edward Island and all the provinces west of Quebec, children formed less than 35 p.c. of households living in apartments and flats. For cities of over 30,000, percentages ranged between 56·9 for Three Rivers and 27·3 for Victoria and tended to concentrate around 30 p.c. Apart from this noticeably smaller proportion of children in apartments and flats outside of Quebec, there appeared to be no significant differences in proportions for other types of dwellings. (See Part II, Table 7.)

CHAPTER V

THE ADEQUACY OF CANADIAN HOUSING ACCOMMODATION

It must be made clear at the outset that the quantitative data available for this study provide only a partial basis of judging whether or not Canadian housing accommodation is adequate. One large room, well lighted, properly ventilated and heated, may provide better living quarters than two rooms which are small, dark, and without proper ventilation or heating. The age of the occupants is another important consideration of which it is not possible to take account. Even with all such relevant facts at hand, there would still remain the problem of what accommodation may rightly be termed adequate. Any available criteria of adequacy are admittedly arbitrary since they rest chiefly upon personal opinion rather than scientific tests. The only criterion available for the present analysis is the number of rooms per person, which is imperfect even as a measure of crowding. When supplemented by information pertaining to rentals and earnings, however, it is possible to make space comparisons of some significance. One room per person has been assumed to represent an adequate amount of housing space. This corresponds to the practice followed in presenting the Real Property Inventory of the United States in 1934 but it is more liberal than the allowance of two persons per room considered by the International Labour Office* in a recent study of European housing conditions.

Trends in Rooms per Person.—Although accurate averages of space per person were not available from earlier censuses, sufficient information is available to make close estimates covering the counts of 1931, 1921, 1911, and 1901.† These figures reveal the greatest relative improvement in areas which were newly settled in 1901. In the territories which later became Saskatchewan and Alberta, there was in 1901 an average of only 0·68 rooms per person as compared with a Dominion average of 1·16. In 1931 the Prairie Provinces still fell materially below the Dominion average of 1·27 rooms per person but, whereas this represented an average improvement of 9 p.c., corresponding percentages for the Western Provinces were: Manitoba 25 p.c., Saskatchewan 38 p.c., Alberta 49 p.c. and British Columbia 40 p.c.

* *Housing Policy in Europe*—Series G 3—p. 22.

† Earlier census results show the number of homes of 1, 2, 3, 4, 5, 6—10, 11+rooms. The percentages of homes of 7, 8, 9, 10, 11, etc., rooms in 1931 were applied to earlier census totals in the 6—10, and 11+groups in order to estimate the total number of rooms occupied. Percentages showing the relative number of homes of 1, 2, 3, 4, and 5 rooms were consistent from 1901 onward.

NUMBER OF ROOMS PER PERSON, 1901-1931[1]

Province or City	1901	1911	1921	1931
CANADA[2]	1·16	1·21	1·25	1·27
Prince Edward Island	1·27	1·50	1·59	1·62
Nova Scotia	1·28	1·40	1·42	1·42
New Brunswick	1·25	1·33	1·37	1·35
Quebec	1·03	1·08	1·13	1·14
Ontario	1·37	1·48	1·50	1·51
Manitoba	0·84	0·95	1·01	1·05
Saskatchewan	0·68	0·78	0·93	0·94
Alberta		0·84	1·01	1·01
British Columbia	0·90	0·99	1·15	1·26
Cities of 30,000 population and over—				
Halifax, N.S.	–	–	1·12	1·23
Saint John, N.B.	–	–	1·39	1·43
Montreal, Que.	–	–	1·08	1·18
Quebec, Que.	–	–	1·03	1·10
Verdun, Que.	–	–	1·02	1·13
Three Rivers, Que.	–	–	1·05	1·04
Toronto, Ont.	–	–	1·29	1·41
Hamilton, Ont.	–	–	1·40	1·41
Ottawa, Ont.	–	–	1·42	1·48
London, Ont.	–	–	1·57	1·64
Windsor, Ont.	–	–	1·37	1·34
Kitchener, Ont.	–	–	1·37	1·39
Brantford, Ont.	–	–	1·52	1·57
Winnipeg, Man.	–	–	1·11	1·19
Regina, Sask.	–	–	1·01	1·12
Saskatoon, Sask.	–	–	1·26	1·20
Calgary, Alta.	–	–	1·25	1·25
Edmonton, Alta.	–	–	1·21	1·22
Vancouver, B.C.	–	–	1·22	1·30
Victoria, B.C.	–	–	1·39	1·53

[1] 1901-21 estimated. [2] Number of rooms per person in 1891 = 1·07. No data available for separate provinces.

Considering the Dominion as a whole, it is apparent that a fairly gradual increase in the estimated average space per person continued from 1901 when this figure was 1·16, until 1921 for which the corresponding average was 1·25. Subsequently, the rate of increase dropped sharply as indicated by the 1931 average of 1·27.

Available statistical data are insufficient to furnish an explanation of changing space per person. There was no discernible relationship, for example, between census figures of population growth and the increase in space per person between 1921 and 1931. Verdun, with a population increase of 143 p.c. recorded one of the largest improvements in average space per person from 1·02 to 1·13. Victoria, with a population increase of less than 1 p.c., also showed a large advance in rooms per person from 1·39 to 1·53. Other cities, with one exception, ranged between these extremes. This exception was Saskatoon in which a decline in space per person from 1·26 to 1·19 was accompanied by a 68 p.c. increase in population.

The same contradictory evidence is provided by census statistics of earnings. In Regina, where there was a population increase of 55 p.c. and an improvement of 0·11 rooms per person between 1921 and 1931, the average earnings of married wage-earner family heads dropped from $1,632 to $1,451. Similarly in Winnipeg, population mounted 22 p.c. while space per person advanced 0·08 rooms per person and average earnings of wage-earner family heads showed a decline from $1,600 to $1,472. In other cities, such as Montreal, Toronto and Victoria, greater earnings were accompanied by population increases and more space per person, as might be expected, but exceptions were too frequent to make direct inferences from these data. These relationships have been further complicated by a decline in general living costs while rents were rising.

Presumably it would be necessary to have continuous records of statistical series mentioned in the foregoing paragraphs, as well as a detailed record of residential building, in order to gain an adequate idea of relationships between space occupied and factors having a bearing upon it. At present no such series exist. A clue to the apparent contradictions mentioned above is furnished, however, by records of residential building contracts awarded in Ontario and Quebec between 1921 and 1931. The increase between 1921 and 1928 in the value of residential building contracts awarded was 45 p.c. for Ontario and 199 p.c. for Quebec. Subsequent declines between 1928 and 1931 were 39 p.c. for Ontario and 47 p.c. for Quebec. Population during the decade between 1921 and 1931 mounted by 17 p.c. in Ontario and 22 p.c. in Quebec. The tendency for residential building to expand rapidly at uneven rates in different areas when times are prosperous, and to contract irregularly when depression sets in, is plainly apparent. Population, on the other hand, tends to maintain a fairly even rate of growth, in marked contrast with the erratic behaviour of building. A cross-sectional view of factors affecting space per person, of course, cannot reveal different and changing rates of growth. It would be quite possible, for example, to have a building boom and rapid extension of living accommodation, providing more rooms per person, followed by a coincidental decline in earnings and living costs. Even if rents remained stationary, more commodious living quarters could still be provided so long as aggregate living costs fell faster than earnings. There is reason to believe this situation actually occurred between 1921 and 1931.

It seems safe to assume that in urban areas at least, income rather than the rate of population growth or state of development is the fundamental factor contributing to adequate housing. As will be noted later, families with relatively large earnings have more space than those with low earnings and, likewise, rooms per person tend to increase in the higher rental groups.

Provincial, Rural-Urban and Owner-Tenant Comparisons of Rooms per Person.—It has been stated that the population of Eastern Canada is more amply provided with housing space than is the population of the more recently settled areas in the West. British Columbia, however, which has grown from one of the oldest Western settlements and which possesses abundant housing materials, compares favourably with Eastern Canada, particularly in urban areas. For the Dominion as a whole, the average number of rooms per person in 1931 was 1·27. In the provinces of Prince Edward Island, Nova Scotia, New Brunswick and Ontario, this average was exceeded but, in the remaining five, provincial figures were lower than average due chiefly to crowding in rural areas. For the three Prairie Provinces the average accommodation was less than one room per person in rural communities. The actual rural averages were:

Manitoba 0·93, Saskatchewan 0·84, and Alberta 0·88. Space per person in Prince Edward Island, Nova Scotia and Ontario was greater in rural than in urban areas but the reverse was true in all other provinces. The Dominion average for the rural population was 1·19 rooms per person as compared with 1·34 for urban dwellers. The age of the settlement, its wealth, the type of farming which is done, the climate and the availability of a cheap fuel supply all appear to have a bearing upon rural housing.

In Western Canada, for example, farms are large and the growth of grain production has involved the need for extensive equipment in implements and power machinery. Relative to his total investment, the Western farmer's outlay on land and machinery has been heavy. This fact, together with inaccessibility of building materials and fuel in a relatively cold climate has contributed to crowded conditions in rural Prairie areas. It is significant that crowding there has lessened materially since 1901, indicating that as his position became more secure economically the farmer has improved housing accommodation. Even in well established communities, however, the type of farming still affects living conditions. New Brunswick, with more machinery per farm than Nova Scotia is less well equipped with household appliances* and in 1931 averaged only 1·29 rooms per person in rural areas as compared with 1·49 for Nova Scotia.

It has been noted that the average number of rooms per person throughout the Dominion in urban areas was 1·34 and, as in the case of rural districts, most of the Eastern Provinces exceeded this average while the Western Provinces fell below it. There was much greater difference between the high and low averages in rural than in urban figures. The latter ranged from 1·54 for Prince Edward Island to 1·17 for Saskatchewan, while the corresponding rural range was indicated by the averages for these same provinces, of 1·65 and 0·84, respectively. (See Part II, Tables 8 and 9.)

* Bulletin No. 19, Seventh Census of Canada, pp. 10 and 16.

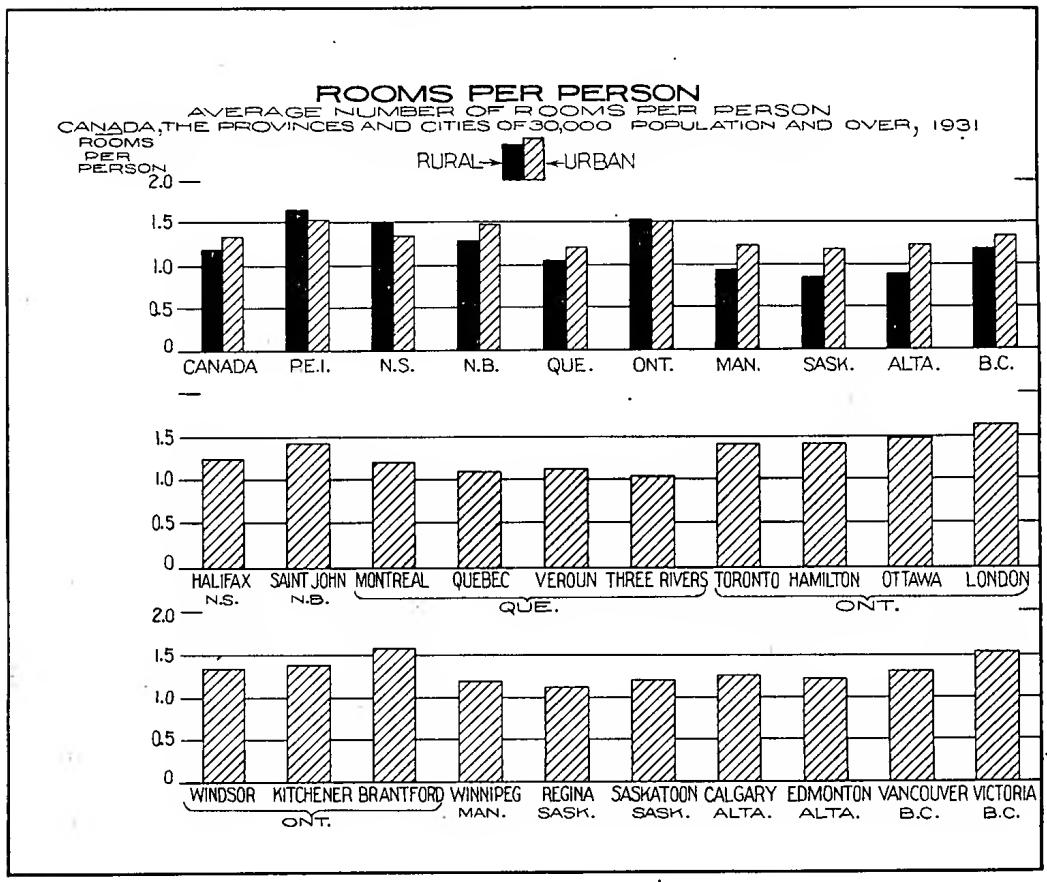


Chart 6

As might be anticipated, the population living in owned homes enjoyed more space per person than tenant occupants, although differences were generally not large. The Dominion average for owner households was 1·33 rooms per person as against 1·16 for tenant households. There were, however, noteworthy exceptions to this relationship. Tenant households in Saskatchewan and Alberta had slightly more space per person than owner households and in Manitoba the two groups were almost upon a par. This is explained by the relatively large number of rural owned homes in these provinces in which crowding is more marked than in any other class of Canadian home. In Prairie urban centres, more adequate accommodation existed in owned than in rented homes but the rural population is so important in Alberta and Saskatchewan that it dominated 1931 provincial averages of rooms per person. The following statement is an extract from Table 8, Part II.

ROOMS PER PERSON FOR TOTAL POPULATION CLASSIFIED AS (1) RURAL AND URBAN AND (2) OWNERS AND TENANTS, 1931

Province	Total Population	Rural	Urban	Owners	Tenants
CANADA	1·27	1·19	1·34	1·33	1·16
Prince Edward Island	1·62	1·65	1·54	1·68	1·32
Ontario	1·51	1·53	1·50	1·65	1·29
Nova Scotia	1·42	1·49	1·34	1·55	1·14
New Brunswick	1·35	1·29	1·47	1·40	1·24
British Columbia	1·26	1·17	1·33	1·34	1·15
Quebec	1·14	1·05	1·20	1·16	1·11
Manitoba	1·05	0·93	1·21	1·06	1·04
Alberta	1·01	0·88	1·22	1·00	1·03
Saskatchewan	0·94	0·84	1·17	0·93	0·97

Distribution of Population in Urban Homes.—An approximate idea of rooms per person is given in the preceding section but unfortunately such averages provide only superficial information concerning this subject. To gain a clear conception of the adequacy of existing housing accommodation, it is necessary to know the distribution of households of different sizes classified according to the number of rooms occupied. The arrangement of census data in this form is a laborious and costly process, which precluded general treatment of 1931 data in such a manner. It has been possible, however, to make compilations for three large urban areas, *viz.*, Montreal, Toronto and Winnipeg, showing the number of persons per household classified according to the number of rooms occupied. Since the distribution of families according to room groups is similar in all urban areas, this information is of considerable value in indicating the location and extent of crowding in Canadian cities of over 30,000 population. It is presented in Tables 10 and 11, Part II, showing, first, the number of rooms occupied by households of different sizes and, second, the actual number of persons in specified room groups.

Relatively little crowding appeared to exist among families of four persons or less. The proportion of four-person households with less than one room per person was 8·2 p.c. for Montreal, 10·8 p.c. for Toronto, and 17·9 p.c. for Winnipeg, and similar figures for smaller households were considerably lower. These percentages rose rapidly for household groups of more than five persons and households of more than six persons averaged less than one room per person in all three cities. This group included 20·1 p.c. of households in Montreal, 11·8 p.c. of households in Toronto and 15·0 p.c. of households in Winnipeg. Of the household groups with more than eight persons, 76·7 p.c. to 97·6 p.c. occupied less than one room per person, the first figure referring to nine-person households in Toronto and the latter figure to those of fifteen persons in Winnipeg. From these data it appears that the great majority of households of more than six persons were inadequately housed. The fact that this was true of Toronto is particularly significant, for space available per person in that city compared favourably with most other Canadian cities of over 30,000 population.

Turning from family groups to the accommodation of individuals, the facts are even more striking. They are shown in summary form in the following statement, which indicates the number of rooms per person occupied by the first, second and third quarters of the population in each city.

Item	Rooms per Person		
	Montreal	Toronto	Winnipeg
One-quarter of the population live in less than	0·78	1·00	0·82
One-half of the population live in less than	1·13	1·34	1·17
Three-quarters of the population live in less than	1·48	1·87	1·51

Considering only the persons living in less than one room, it was found that the percentage these formed of the total population was surprisingly high. The figures are as follows:—

City	Percentage of the Population Living in —			
	Less than 1 Room per Person	0·50 Rooms or less per Person	0·50—0·74 Rooms per Person	0·75—0·99 Rooms per Person
Montreal	40·48	3·74	19·79	16·95
Toronto	24·18	1·46	0·05	12·77
Winnipeg	35·74	3·58	16·27	15·89

After an examination of such figures, the question naturally arises: Are these conditions typical of those in other Canadian cities? No final answer can be given at the present time but evidence available would support a reply in the affirmative.

There were only five out of a total of 20 cities of over 30,000 in 1931 for which the average space per person was greater than in Toronto and four in which the average space per person was less than in Montreal or Winnipeg. In these four it may be assumed fairly safely that over 40 p.c. of the population was living in less than one room per person. In the seven cities with averages between those of Toronto and Winnipeg, comparable percentages would likely have ranged between 25 and 40. In only five cities is it likely that the proportion of persons living in less than one room was below 25 p.c. The basis of this judgment is the brief statement immediately preceding and the one which follows, showing the average number of rooms per person in cities of over 30,000 population, an extract from Table 9, Part II.

ACCOMMODATION IN HOUSEHOLDS OF CITIES OVER 30,000, 1931

City	Rooms per Person	Persons per Household	Rooms per Household
Three Rivers	1·04	5·45	5·65
Quebec	1·10	5·29	5·83
Regina	1·12	4·26	4·79
Verdun	1·13	4·27	4·82
Montreal	*1·18*	*4·60*	*5·43*
Winnipeg	*1·19*	*4·37*	*5·20*
Saskatoon	1·20	4·25	5·09
Edmonton	1·22	3·99	4·87
Halifax	1·23	4·55	5·60
Calgary	1·25	3·94	4·94
Vancouver	1·30	3·72	4·83
Windsor	1·34	4·18	5·62
Kitchener	1·39	4·20	5·85
Hamilton	1·41	4·12	5·80
Toronto	*1·41*	*4·10*	*5·78*
Saint John	1·43	4·21	6·03
Ottawa	1·48	4·40	6·52
Victoria	1·53	3·43	5·26
Brantford	1·57	3·95	6·19
London	1·64	3·88	6·34

It may be noted from the above statement that no close relationship existed between the average number of rooms per household and the average number of persons per household. London, with the largest number of rooms per household, had less than the average number of persons per household. The average number of persons per household in Prairie cities was somewhat larger than in Ontario cities, although the average number of rooms per household was appreciably larger in Ontario than on the Prairies. It would appear fairly clear from the facts cited that the size of the home did not influence the size of families to any appreciable extent.

Number of Children per Household as a Crowding Factor.—It might be expected that where the number of children was above average, the number of rooms per person would fall below average. This relationship, however, is by no means usual; just as frequently a greater than average number of children was accompanied in 1931 by a greater than average number of rooms. Differences appeared to be mainly geographical, although related to some extent to rural and urban conditions.* The similarity between urban and tenant positions with respect to these factors naturally was quite marked since tenants were largely urban dwellers and commonly form a majority of urban households. The statement which follows indicates in concise form the relationships of provincial and Dominion averages (based on Table 8, Part II.)

RELATIONSHIPS BETWEEN PROVINCIAL AND DOMINION AVERAGES OF THE NUMBER OF CHILDREN PER HOUSEHOLD AND THE NUMBER OF ROOMS PER PERSON, 1931

Province	Total	Rural	Urban	Owners	Tenants
Prince Edward Island	C	B	C	B	C
Nova Scotia	C	B	C	B	A
New Brunswick	C	C	C	C	C
Quebec	A	A	A	A	A
Ontario	B	B	B	B	B
Manitoba	A	A	D	A	D
Saskatchewan	A	A	D	A	D
Alberta	D	D	D	D	D
British Columbia	D	D	D	B	D

A—number of children *above* Dominion average and number of rooms per person *below* Dominion average
B—number of children *below* Dominion average and number of rooms per person *above* Dominion average
C—number of children *above* Dominion average and number of rooms per person *above* Dominion average
D—number of children *below* Dominion average and number of rooms per person *below* Dominion average

Crowding in Low Rental Homes.—This section is limited almost entirely to a consideration of cities of over 30,000 population. Separate figures for smaller cities were not available and it was considered that provincial averages were too broad to be of much significance. Due to the organization of census records, households with husband and wife living together have been taken as typical of all urban tenant households. They comprised 330,137 out of a total of 426,157 ordinary tenant households in cities of over 30,000. The residue of 96,020 tenant households included one-person households and those living in institutions, etc.

In 1931, there were 51,778 households paying rent of $15 or less per month in the twenty largest cities of Canada and approximately 5,000 were paying less than $10 per month. In very few of these cities were such tenants living in homes which provided an average of one room per person. Tenants in Regina paying less than $10 per month averaged 0·5 rooms per person and other cities ranged upward to 1·1 rooms for tenants in this group. The average number of rooms per person was 1·0 or better for only four of the twenty cities among tenants paying from $10 to

* However, for the country as a whole, rooms per person decline as children per family increase (see page 433). Regional housing differences hide this tendency in the above comparison.

$15 per month. Averages in this group ranged from 0·6 for Regina, Sask., to 1·1 for Victoria, B.C. Accommodation generally averaged 1·0 rooms per person or better where rentals exceeded $15 per month.

ROOMS PER PERSON FOR TENANT HOUSEHOLDS[1] PAYING RENTS OF $15 OR LESS PER MONTH, 1931

Cities of over 30,000 Population	Less than $10 per Month		$10–$15 per Month	
	Households	Rooms per Person	Households	Rooms per Person
TOTAL	4,879	-	46,899	-
Halifax, N.S.	245	0·6	1,327	0·7
Saint John, N.B.	361	0·9	2,014	1·1
Montreal, Que.	1,139	0·8	19,896	0·9
Quebec, Que.	195	0·7	2,227	0·8
Verdun, Que.	26	0·8	730	0·9
Three Rivers, Que.	79	0·8	976	0·8
Toronto, Ont.	488	0·8	4,565	0·8
Hamilton, Ont.	304	0·8	2,026	0·9
Ottawa, Ont.	110	0·7	1,206	0·9
London, Ont.	52	1·1	625	1·1
Windsor, Ont.	36	0·8	414	0·9
Kitchener, Ont.	80	0·7	539	0·8
Brantford, Ont.	78	0·9	667	1·1
Winnipeg, Man.	586	0·6	2,912	0·7
Regina, Sask.	119	0·5	859	0·6
Saskatoon, Sask.	60	0·6	538	0·8
Calgary, Alta.	84	0·7	842	0·7
Edmonton, Alta.	325	0·7	1,199	0·8
Vancouver, B.C.	435	0·8	2,622	0·8
Victoria, B.C.	77	0·9	715	1·1

[1] Includes only households with husband and wife living together as heads.

The evidence of crowding indicated by these figures is scarcely more important than the simple fact that over 50,000 tenant households comprising approximately 12 p.c. of the tenant households in the twenty largest cities were paying rent of $15 or less per month. It is a safe assumption that the great majority of unsatisfactory dwellings revealed by surveys cited in Chapter III are included in this group. It is also certain that a large proportion of the families concerned cannot afford even as much as $15 per month for rent. On the other hand, it has been calculated by the Lieutenant-Governor's Committee for Toronto and verified by the National Construction Council* that a dwelling involving a capital expenditure of $2,700 cannot be rented for $12.50 per month except at a loss of approximately $90 per annum, even assuming the exceptionally low interest rate on capital of 4 p.c. A 6 p.c. rate would involve an annual deficit of over $140 per annum. The gap between income for low wage groups and building costs is further widened by the fact that commercial interest rates are generally insufficient to provide for the self-liquidation of projects requiring capital expenditure of less than $3,500. The only alternatives to admittedly unsatisfactory housing conditions now in existence therefore appear to be either in a change in the national income structure, or in some sort of subsidization to supplement private enterprise in providing adequate accommodation for families with small incomes.

* Special Parliamentary Committee on Housing, 1935, p. 376.

Tenure and Household Type in Relation to Crowding.—As already noted, tenant households generally had somewhat less space per person in 1931 than occupants of owned homes but census records do not reveal much indication of crowded conditions in the typical one-family tenant household. However, in households of two or more families of which there were 26,775 in cities of over 30,000 there was an average of only 0·92 rooms per person. In all but three cases city averages were below 1·00, ranging from 0·77 for Three Rivers, Que., to 1·08 for Victoria, B.C. It is worthy of note that less than 2,000 of these multiple-family households were included among the 51,778 tenants paying $15 per month rent or less. Most multiple-family dwellings are of more than average size and still command rentals above this level despite their characteristic run-down condition and lack of equipment.

It has already been pointed out that in Alberta and Saskatchewan tenants occupied more rooms per person than the occupants of owned homes. This was due to crowding in the homes of rural owners. In cities of over 30,000, one-family owner and tenant households both averaged more than one room per person in the Prairie Provinces. Multiple-family owner households, however, were on the borderline, averaging 1·00 rooms per person in Saskatoon and Regina, 1·05 in Calgary and Winnipeg, and 1·03 in Edmonton. Multiple-family tenant households averaged 0·84 in Winnipeg and Saskatoon, 0·79 in Regina, 0·84 in Calgary and 0·87 in Edmonton. Saint John, London and Victoria were the only cities of over 30,000 in which multiple-family tenant households averaged more than one room per person. (See Part II, Table 14 and Chart 17, page 499.)

Rooms per Person in Different Types of Dwellings.—It is at once apparent from the statement which follows (an extract from Table 7, Part II) that no discernible relation existed between crowding and different types of dwellings. Averages of 1·28 for single houses, 1·30 for semi-detached houses, 1·18 for apartments and flats, and 1·20 for rows and terraces were all well above the arbitrary minimum of 1·00 considered as adequate. Sub-average figures for the Western Provinces were common to all types of dwellings. (See Chart 4, page 450.)

AVERAGE NUMBER OF ROOMS PER PERSON IN DIFFERENT TYPES OF DWELLINGS, 1931

Province	Single Houses	Semi-Detached Houses	Apartments and Flats	Rows or Terraces
CANADA	1·28	1·30	1·18	1·20
Prince Edward Island	1·64	1·45	1·45	1·27
Nova Scotia	1·47	1·11	1·12	1·04
New Brunswick	1·35	1·36	1·37	1·35
Quebec	1·13	1·22	1·14	1·22
Ontario	1·56	1·36	1·40	1·22
Manitoba	1·05	0·98	1·14	0·93
Saskatchewan	0·94	1·13	1·03	1·16
Alberta	1·01	1·15	1·02	0·88
British Columbia	1·27	1·24	1·18	1·01

Conclusions.—Although Dominion averages show little indication of crowding, it has been demonstrated by reference to detailed data for Montreal, Toronto and Winnipeg that evidence of crowding did exist. It has been shown, for example, that at least 25 p.c. of the population in the majority of Canadian cities of over 30,000 lived in less than one room per person at the time of the 1931 Census and in some cities it is probable that 40 p.c. or more of the population occupied less than one room per person. These conditions obtained where the average number of rooms per person ranged from 1·04 to 1·41, illustrating how satisfactory averages may obscure a comparatively unsatisfactory condition.

Insufficient income appeared to be the cause of crowding revealed by the 1931 Census. As already noted, the clearest evidence of crowding was shown for tenants paying $15 or less per month in rent and for multiple-family household tenants. It is rarely possible to obtain adequate living quarters of four or five rooms for $15 per month in larger Canadian cities. The fact that 15·7 p.c. of all tenants in cities of over 30,000 were limited to this amount indicates that pressure from limited incomes was mainly responsible for the occupation of such dwellings. Likewise, the explanation of two or more families living together as a single household is usually traceable to inadequate income.

In the Prairie Provinces, rooms per person averaged less than elsewhere in the Dominion. Although this was most pronounced in rural areas, it was also clearly evident in urban centres. Relatively higher building costs and rentals as well as higher heating costs presumably were mainly accountable for this condition, which was apparent in high as well as low rental tenant groups.

Census data showed no other relationships which would shed light upon conditions of crowding. More than the average number of children were associated with crowding only in areas where incomes were relatively low. Although owners were more spaciously housed than tenants, the difference did not appear significant except in the case of tenant households of two or more families which, as already observed, is related to lack of income. Finally, there appeared to be no connection between the type of dwelling and the average number of rooms per person.

CHAPTER VI

URBAN EARNINGS AND HOUSING ACCOMMODATION

Introductory.—This chapter presents an analysis of Canadian urban earnings and housing data for 1931 and 1936. The basic material has been obtained by sampling census returns for households of a predominant type from some of the principal cities of Canada. The random sample for each city usually consisted of 1,000 or more cases, about equally divided between tenant and owner households of the wage-earner and salaried classes. The sample was limited further to households of one private family with husband and wife living together as joint family heads, such cases usually comprising from one-half to three-quarters of all households in the cities examined. Some households included one or more lodgers and, in such cases, family earnings excluded amounts earned by these individuals. The lodgers were included, however, in calculations of rooms per person.

The analysis of these data has been made with several main objectives in view. Foremost has been that of obtaining a picture of the distribution of earnings and of differences in earnings levels between 1931 and 1936. The relationship between earnings and various significant characteristics of housing and tenure is examined in the remainder of the chapter. Answers have been sought to such questions as: How do earnings of owners and tenants compare? What is the relation between earnings and adequacy of accommodation? What proportion of earnings is devoted to rents, and how do earnings compare with the value of homes owned?

The nature of family earnings and rents warrants a brief comment. Family earnings as reported to census enumerators may not have been perfectly exact. However, comparative tests of these data with earnings averages computed from industrial census returns have given results that checked very closely. Further, the consistency discovered in earnings distributions gives grounds for believing that the data provide a reliable basis for appraising the earnings situation. Rent comparisons were complicated by the fact that no distinction could be made between furnished and unfurnished or heated and unheated dwellings. It is safe to say, however, that the proportion of furnished homes is small and has a negligible effect upon the samples examined. The proportion of heated homes varies from city to city, depending chiefly upon the number of dwellers in apartments and flats but this fact should make very little difference to an examination of underlying tendencies affecting rent-earnings ratios and, of course, it is of no consequence in the consideration of owned homes.

Average Family Earnings.—The data hereafter presented indicate the earnings position of the most typical Canadian family. The proportion of all families which this type forms in the cities sampled and the size of the sample may be observed from the following statements:—

TOTAL HOUSEHOLDS IN CITIES SAMPLED, 1931

City	Total Households	Estimated One-Family Wage-Earner Households with Husband and Wife as Joint Heads [1]	
		No.	P.C. of Total in City
Halifax	12,213	6,700	55
Three Rivers	6,208	4,200	68
Montreal	171,348	104,800	61
Verdun	13,919	10,600	76
Toronto	149,994	81,300	54
Hamilton	37,270	22,300	60
Brantford	7,503	4,300	57
Winnipeg	48,583	28,100	58
Regina	12,074	7,500	62
Saskatoon	9,769	5,800	59
Calgary	20,543	11,800	57
Edmonton	19,007	10,700	56
Vancouver	61,268	30,400	50
Victoria	10,523	3,700	35

[1] The residual households include all families with non-wage-earner heads and broken families with wage-earner heads.

WAGE-EARNER FAMILIES OF SAMPLE, BY TENURE, FOR SPECIFIED CITIES, 1931 AND 1936

City	Total	Owners	Tenants
1931			
Halifax	1,180	646	534
Three Rivers	655	307	348
Montreal	1,897	933	964
Verdun	1,156	494	662
Toronto	1,925	962	963
Hamilton	1,440	725	715
Brantford	1,185	569	616
Winnipeg	1,382	665	717
Regina	1,152	580	572
Saskatoon	1,180	613	567
Calgary	1,038	457	581
Edmonton	1,223	610	613
Vancouver	1,285	720	565
Victoria	1,252	701	551
1936			
Winnipeg	1,565	673	892
Regina	1,196	574	622
Saskatoon	1,237	619	618
Calgary	1,309	570	739
Edmonton	1,233	626	607

To obtain an accurate idea of relative levels of earnings in various cities, it is necessary to know the average earnings per person in addition to family earnings, since the average size of families differed appreciably from place to place. Averages of sample earnings are shown in Chart 7 and the statement following:—

PERSONS PER HOUSEHOLD AND AVERAGE ANNUAL[1] EARNINGS PER HOUSEHOLD AND PER PERSON IN SPECIFIED CITIES, 1931 AND 1936

City	Persons per Household[2]		Average Earnings per Household		Average Earnings per Person	
	1931	1936	1931	1936	1931	1936
			$	$	$	$
Halifax	4·4	.....	1,602	.....	366	.....
Three Rivers	5·5	.....	1,450	.....	266	.....
Montreal	4·3	.....	1,622	.....	375	.....
Verdun	4·4	.....	1,530	.....	359	.....
Toronto	3·7	.....	1,934	.....	516	.....
Hamilton	3·9	.....	1,449	.....	371	.....
Brantford	4·0	.....	1,379	.....	345	.....
Winnipeg	4·1	3·9	1,784	1,333	435	339
Regina	4·0	4·0	1,718	1,284	433	323
Saskatoon	4·0	4·0	1,697	1,256	424	310
Calgary	3·8	3·8	1,697	1,295	444	339
Edmonton	4·0	4·0	1,579	1,119	395	280
Vancouver	3·8	.....	1,589	.....	419	.....
Victoria	3·7	.....	1,533	.....	409	.....

[1] Year ended June 30. Tenant and owner averages weighted according to proportions of these types of households.
[2] Exclusive of lodgers.

It seems improbable that comprehensive city averages of income per person would differ materially from these figures. As already indicated, one-family households of the type sampled represented a large proportion of all households. Residual wage-earner households would increase the proportion to better than 70 p.c. of the total. Income per person in these residual wage-earner families, however, would probably be lower than the figures shown above since they included many multiple-family households and others with widow heads or husband absent. These would usually live at lower standards than single-family households. Against them must be balanced families living on income from investments and those whose chief bread winners were employers or worked on their own account. Together these formed not more than 20 p.c. of urban households in cities of over 30,000 population. Finally, there was a further 8 p.c. whose heads had no recognized occupation, largely representing broken families supported mainly by junior members and likely to average less earnings per person than unbroken families with wage-earner heads.

It will be observed from the preceding statement that average earnings per household in 1931 ranged from $1,934 down to $1,379. However, differences in the average number of persons per family make earnings per person more significant than earnings per household. The range of variation here was relatively greater with averages running from $516 down to $266 per person. Western averages were generally above $400 per person, with Eastern figures mostly between $350 and $400. The 1936 sample for the Prairies pointed to a marked decline centering around 25 p.c. during the preceding five years.

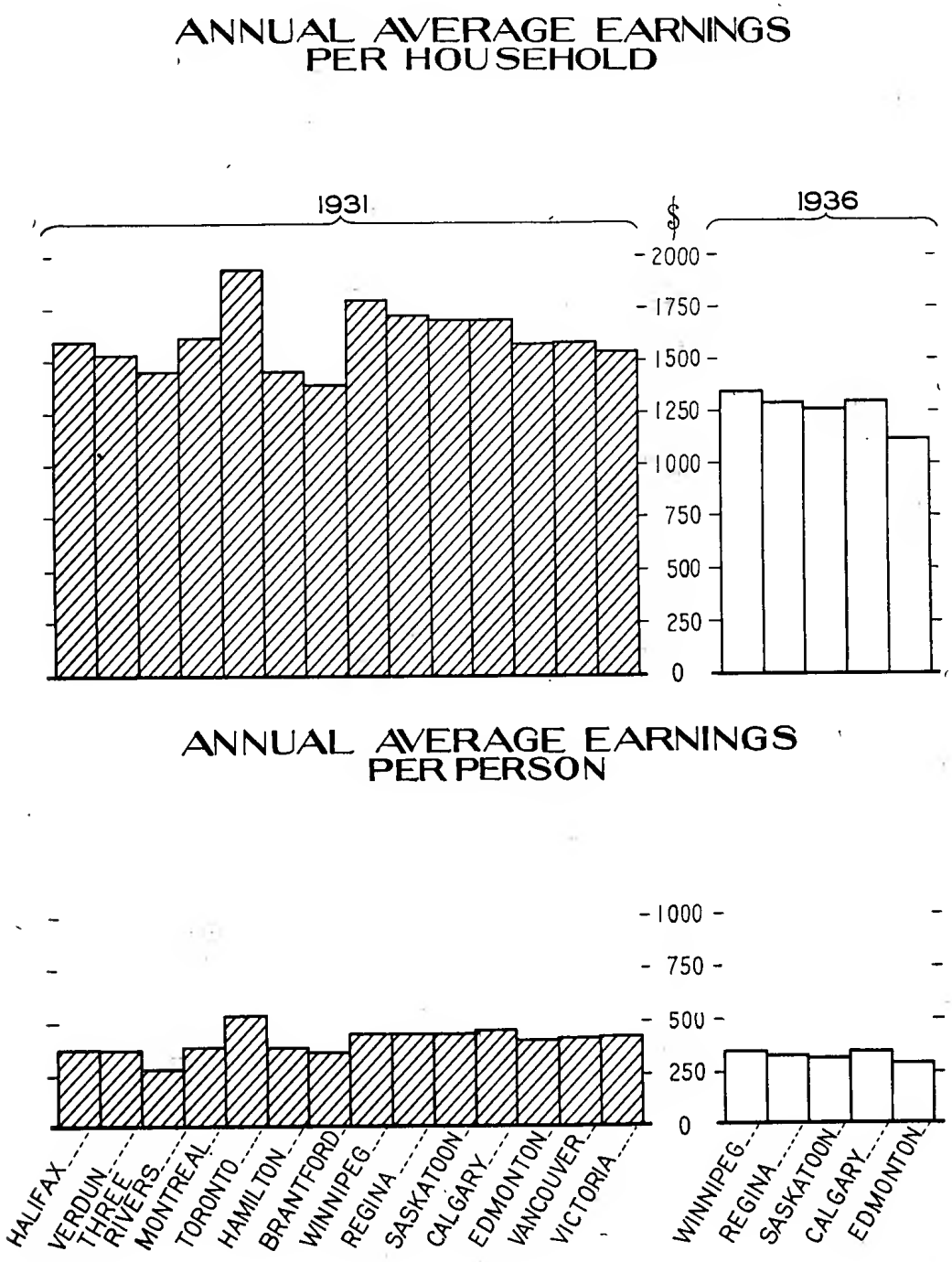


Chart 7

The Relative Purchasing Power of Earnings.—The range of variation noted for earnings per person did not reveal the extent of differences in living standards since living costs are sometimes relatively high or low when compared to levels of earnings. No comprehensive basis of evaluating differences in living standards was available but two independent tests have been made which point to a wider range of living standards than earnings averages would indicate. In the first, index numbers of earnings per person were divided by corresponding city index numbers for a workman's family budget of foods, fuel and rent. These may be considered as necessities and sufficient to give an approximate idea of the purchasing power of earnings over essentials to the family budget. Figures for Regina were taken arbitrarily as equal to 100 for the purpose of this comparison. The distribution of indexes for earnings per person showed much less scatter than that for indexes indicative of purchasing power over necessities, as may be observed from the following statement:—

Index Number Range (Regina = 100)	Rating of Cities According to Index Numbers of —			
	Earnings per Person, 1931		Purchasing Power over Necessities, 1931	
	City	Number of Cities	Number of Cities	City
Under 80	Three Rivers	1	1	Three Rivers
80-89	Halifax, Montreal, Hamilton, Brantford	4	2	Halifax, Brantford
90-99	Saskatoon, Edmonton, Vancouver, Victoria	4	2	Montreal, Hamilton
100-109	Winnipeg, Regina, Calgary	3	4	Winnipeg, Regina, Saskatoon, Edmonton
110 and over	Toronto	1	4	Toronto, Calgary, Vancouver, Victoria

Wide divergence in purchasing power over items which may be classed as luxuries was indicated also by per capita figures for radios and passenger automobiles similarly related to Regina totals. Such percentages cannot be compared directly with those above, but they point to differences in purchasing power much greater than might be inferred from indexes of average earnings per person.

Index Number Range (Regina = 100)	Rating of Cities According to Index Numbers of —			
	Radios per Capita, 1931		Passenger Autos per Capita, 1931	
	City	Number of Cities	Number of Cities	City
Under 80	Three Rivers	1	4	Halifax, Three Rivers, Montreal, Winnipeg
80-89	Edmonton	1	—	—
90-99	Halifax, Montreal, Winnipeg, Saskatoon	4	4	Hamilton, Saskatoon, Edmonton, Vancouver
100-109	Regina, Calgary	2	2	Brantford, Regina
110-149	Brantford, Vancouver, Victoria	3	2	Toronto, Calgary
150 and over	Toronto, Hamiltoa	2	1	Victoria

Other earnings records from the Prairie Census of 1936 indicate that the purchasing power of earnings per person over necessities was somewhat less in 1936 than in 1931. The decline in general living standards would be greater than that indicated by a comparison of basic budgets for foods, fuel and rent on the one hand and earnings on the other since residual living costs are more rigid than the necessity budget items mentioned. The position of 1936 earnings per person and family budgets with reference to 1931 levels is shown following for representative Prairie cities. No corresponding data are available for earnings in Eastern Canada or British Columbia.

City	P.C. Decline between 1931 and 1936 in	
	Earnings per Person	Family Budgets (foods, rent, fuel)
Winnipeg	22	18
Regina	25	21
Calgary	24	16

Quartile Distribution of Family Earnings.—The question of earnings is more than a matter of averages which may hide wide differences in income. It is important to know the proportions of households at different earnings levels. To this end, data have been compiled in two ways, first to show the range of earnings for the first, second and third quarters of households sampled and, again, to show the percentages of households in smaller earnings groups. The first arrangement is presented in the following statement:—

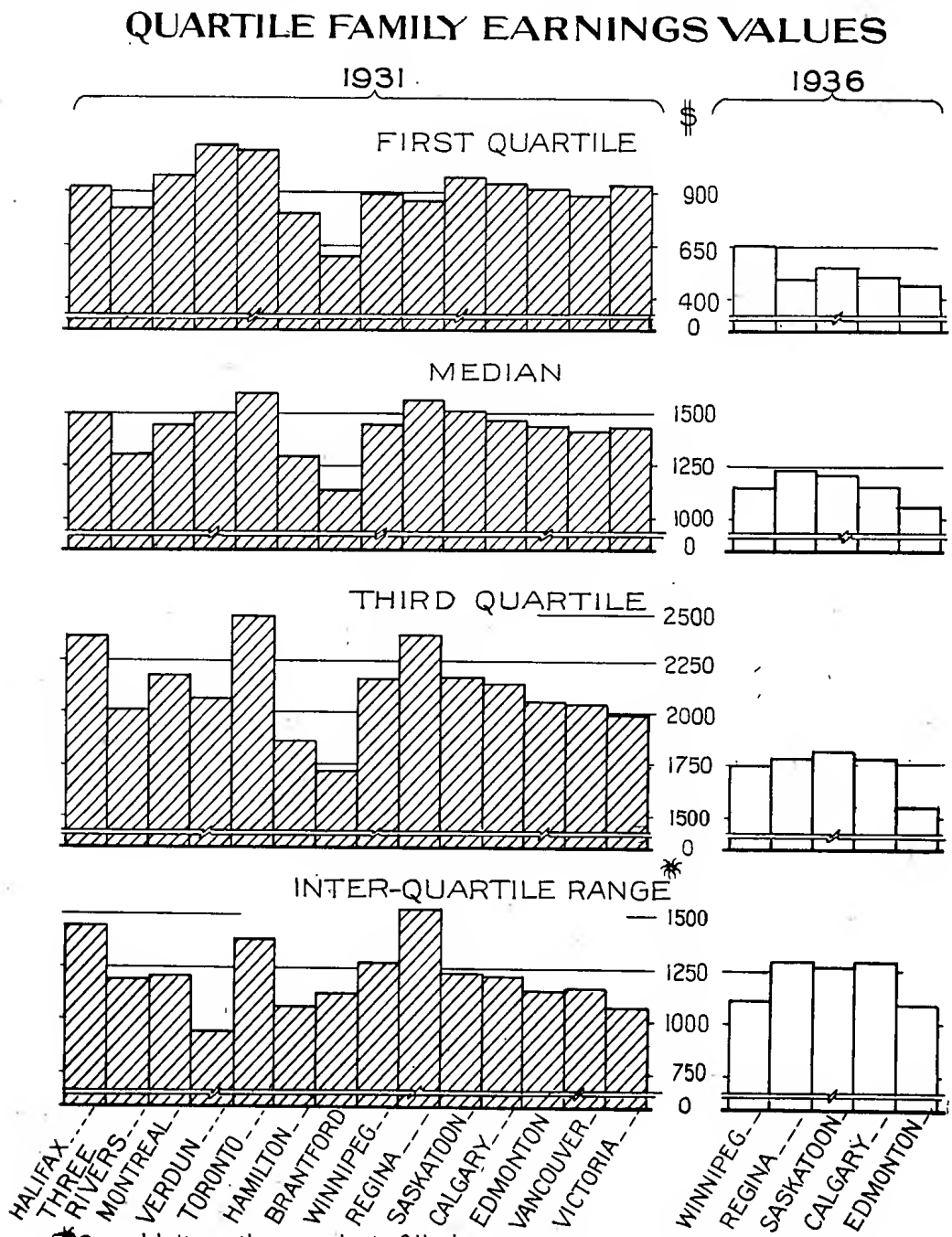
QUARTILE DISTRIBUTION OF FAMILY EARNINGS IN SPECIFIED CITIES, 1931 AND 1936

City	(1) 25 P.C. of Households Receive less than	(2) 50 P.C. of Households Receive less than	(3) 75 P.C. of Households Receive less than	(4) Inter-Quartile Range (col. 3 — col. 1)
	$	$	$	$
1931				
Halifax	923	1,495	2,370	1,447
Three Rivers	822	1,293	2,008	1,186
Montreal	974	1,439	2,181	1,207
Verdun	1,120	1,499	2,065	946
Toronto	1,093	1,583	2,469	1,376
Hamilton	799	1,289	1,859	1,060
Brantford	596	1,126	1,719	1,124
Winnipeg	894	1,443	2,165	1,271
Regina	852	1,557	2,370	1,518
Saskatoon	962	1,509	2,172	1,210
Calgary	936	1,464	2,141	1,204
Edmonton	915	1,439	2,050	1,135
Vancouver	891	1,411	2,039	1,148
Victoria	927	1,426	1,991	1,064
1936				
Winnipeg	655	1,152	1,759	1,104
Regina	497	1,240	1,789	1,293
Saskatoon	552	1,217	1,824	1,272
Calgary	508	1,167	1,795	1,287
Edmonton	473	1,066	1,564	1,091

These figures are of interest not only as an indication of the actual amounts wage-earner families received but also as a guide to the dispersion of earnings. Consequently, they afford a rough index to relative variations in living standards when considered in relation to living costs. The earnings boundary line between the first and second 25 p.c. of households, *i.e.*, the first quartile, was generally between 35 and 40 p.c. below the median or middle level of earnings. In Verdun, the difference was materially less, while in Brantford and Regina it was about 10 p.c. greater. In the upper half, the dividing line between the third and fourth 25 p.c. of households, *i.e.*, the third quartile, was most commonly about 45 p.c. above median earnings values with Verdun and Hamilton falling below this figure and Halifax, Regina and Calgary noticeably above it.

If economic pressure is to be observed among wage-earners, it may logically be looked for in the first quarter of the sample. In 1931, the upper earnings limit for the first quarter ranged between $596 and $1,120 which, in view of living cost data referred to above, is indicative of real differences in living standards in these groups. For a large proportion of households in the lowest earnings group a pronounced deficiency in earnings necessary for a normal livelihood was clearly apparent. Well over one-half of these households comprised more than three persons which in the most favourably situated cases would not allow much more than $300 per person per annum.

Actually, in several cities the typical amount was between $50 and $100 per person. Western data for 1936 indicated a materially weaker economic position for the lowest group of wage-earners than in 1931 with the first earnings quartile reduced between 25 and 50 p.c. Median and third quartile household earnings values did not suffer nearly such drastic reductions. Percentage decreases at these points were about the same in each of the large Prairie cities and ranged usually from 20 to 25 p.c.



* Spread between the upper limit of the lowest 25 per cent and the lower limit of the highest 25 per cent of family earnings.

Chart 8

Distribution of Households According to Earnings.—To supplement the foregoing examination, household earnings were sorted into $400 groups for more careful inspection. It should be borne in mind that the samples include approximately equal proportions of owner and tenant households, whereas actual proportions in a few cities, notably Halifax, Three Rivers, Montreal and Verdun, show a definite preponderance of tenants.* Total distributions for these cities would differ slightly from those shown, as may be judged from tenant and owner distributions appearing separately on page 73. For other centres, the proportions of owners and tenants are so similar as to affect combined distributions very little.

* See—The Housing Accommodation of the Canadian People, Dominion Bureau of Statistics, p. 32.

PERCENTAGES OF FAMILIES AT SPECIFIED EARNINGS LEVELS, 1931 AND 1936

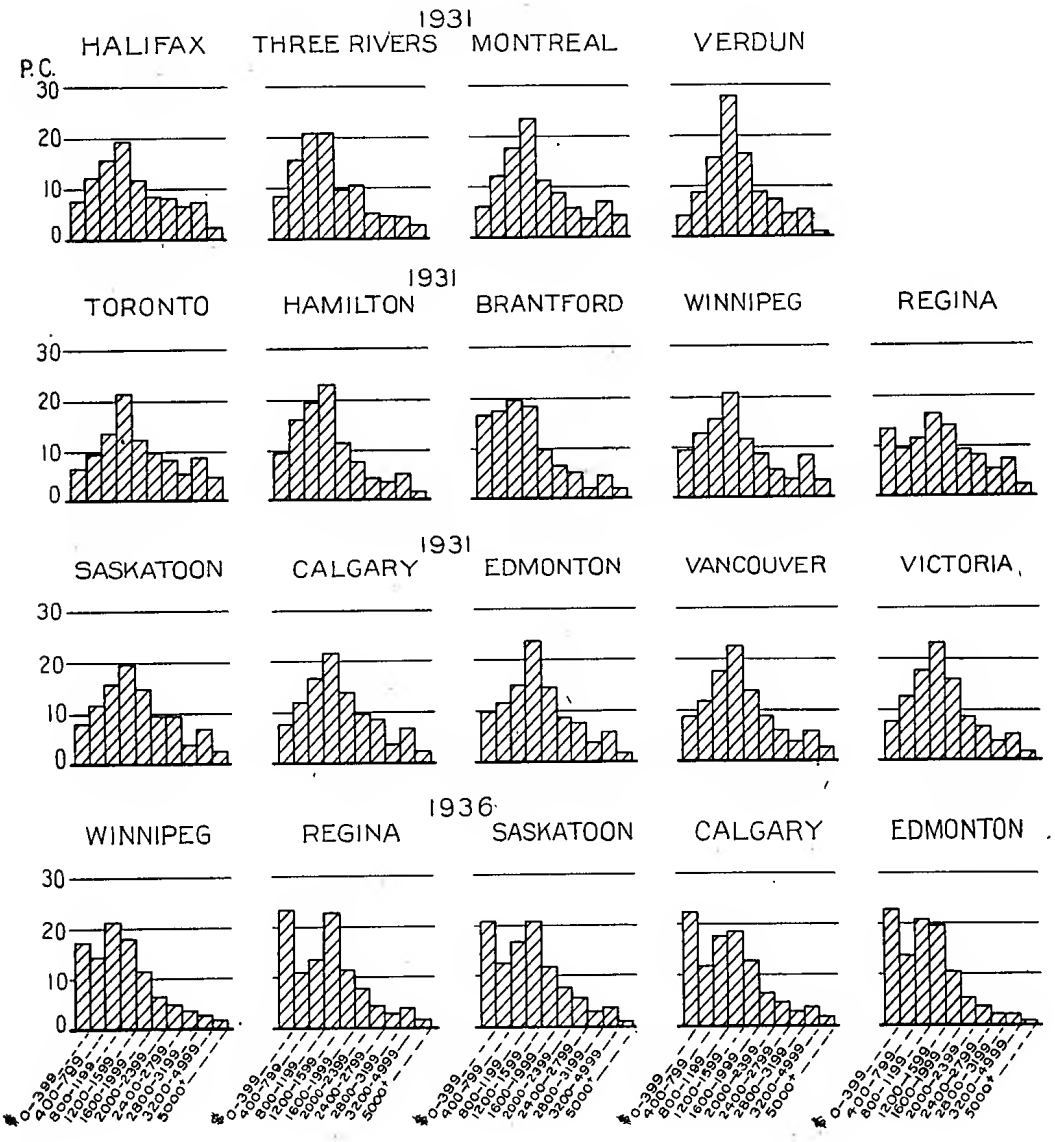


Chart 9

PERCENTAGE OF ALL HOUSEHOLDS AT PROGRESSIVE EARNINGS LEVELS IN SPECIFIED CITIES, 1931 AND 1936

City	$0-399	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799	$2,800-3,199	$3,200-4,999	$5,000 and over
1931	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Halifax	8	12	16	19	12	9	8	7	7	2
Three Rivers	8	15	21	21	9	10	5	4	4	3
Montreal	6	12	18	23	11	9	6	4	7	4
Verdun	4	9	16	28	16	9	7	4	6	1
Toronto	7	9	14	21	12	10	8	5	9	5
Hamilton	9	16	20	23	11	8	4	3	5	1
Brantford	16	17	20	18	10	6	5	2	4	2
Winnipeg	9	13	16	21	12	9	5	4	8	3
Regina	14	10	12	16	15	9	8	6	8	2
Saskatoon	8	12	16	19	14	9	9	4	7	2
Calgary	7	12	16	21	14	9	8	4	7	2
Edmonton	10	11	15	23	14	9	7	4	5	2
Vancouver	9	12	17	22	14	9	6	4	5	2
Victoria	7	12	17	23	16	8	6	4	5	2
1936										
Winnipeg	17	14	21	18	12	6	5	3	2	2
Regina	23	11	13	23	11	8	4	3	3	1
Saskatoon	20	12	17	20	12	7	5	3	4	0
Calgary	22	12	18	19	12	6	4	3	3	1
Edmonton	23	13	21	20	10	5	4	2	2	0

The most common 1931 earnings level in the cities examined was between $1,200 and $1,599 per annum, a range which usually included between 20 and 23 p.c. of all cases sampled. Concentration around this level was quite marked in Verdun but definitely below average in Halifax, Brantford and Regina where the greatest degree of dispersion existed. For Three Rivers, Brantford, Hamilton and Regina there was an abnormally large proportion of returns below the predominant earnings range and distributions for other cities all showed this same tendency to a lesser extent. The 1936 earnings distributions for Prairie cities showed a startling proportion of households with earnings of less than $400 per annum. This ran from 17 to 23 p.c. of the total samples, which explains the sharp drop already noted in the earnings levels at the first quartile. Typical or modal earnings figures for 1936 tended to be slightly below those reported for 1931 and distributions were badly skewed by the high proportions of cases in the group with less than $400. There was a greater degree of concentration apparent in the middle earnings groups at the expense of the higher brackets. Presumably a considerable number of households with relatively high earnings in 1931 also joined the wholly or virtually unemployed in the lowest group with earnings of less than $400.

Average Earnings of Owner and Tenant Households.—Earnings per household in 1931 averaged about $400 per year higher for owner families than those of tenants with variations in averages for cities sampled ranging from $203 up to $722. Actual averages centred around $1,700 for owner households and $1,300 per annum for tenants. Owner averages ranged from $1,555 to $2,178 and tenant averages from $1,145 to $1,724. It will be noted from the following statement that comparisons of earnings per person in most cases showed less proportionate difference than household earnings because the families in owner groups were nearly always larger than the average tenant family. It may also be observed that declines in owner and tenant household earnings between 1931 and 1936 were approximately the same. The decrease over this period approximated $425 per household, with Winnipeg and Edmonton tenants suffering a more severe reduction of over $500 per annum. It should be noted that these reductions bore more heavily upon tenant than upon owner households, since average earnings of the former in 1931 were approximately $400 below those for owner households.

AVERAGE ANNUAL EARNINGS PER FAMILY AND PER PERSON FOR HOUSEHOLDS IN SPECIFIED CITIES, 1931 AND 1936

Cities	Average Annual Earnings per Family			Average Annual Earnings per Person		
	Total	Owners	Tenants	Total	Owners	Tenants
	$	$	$	$	$	$
1931						
Halifax	1,602	2,083	1,361	366	463	317
Three Rivers	1,450	1,724	1,313	266	292	253
Montreal	1,622	2,147	1,532	375	439	364
Verdun	1,530	1,922	1,465	359	418	349
Toronto	1,934	2,178	1,724	516	566	472
Hamilton	1,449	1,694	1,217	371	424	320
Brantford	1,379	1,555	1,145	345	389	286
Winnipeg	1,784	2,059	1,541	435	467	407
Regina	1,718	1,981	1,455	433	472	393
Saskatoon	1,697	1,841	1,552	424	449	398
Calgary	1,697	1,906	1,467	444	477	408
Edmonton	1,579	1,747	1,393	395	437	348
Vancouver	1,589	1,689	1,486	419	430	407
Victoria	1,533	1,763	1,342	409	476	353
1936						
Winnipeg	1,333	1,679	1,026	339	409	278
Regina	1,284	1,541	1,026	323	376	270
Saskatoon	1,256	1,386	1,126	310	338	282
Calgary	1,295	1,529	1,037	339	392	280
Edmonton	1,119	1,332	882	280	333	221

Quartile Earnings of Owner and Tenant Households.—Differences in earnings of owners and tenants may be more completely appreciated when these respective types of households are divided into four equal groups and earnings at the three dividing lines are examined, *i.e.*, the values of the median and first and third quartiles. Median or middle earnings values correspond fairly closely with averages already tabled, but are invariably lower than related averages by amounts usually ranging from $100 to $300. This is characteristic of ordinary earnings distributions, averages for which are influenced materially by the comparatively small number of cases in the higher earnings groups.

Tenant household median earnings centred around 80 p.c. of corresponding owner household median values in 1931, with extremes ranging from 64 p.c. for Halifax to 90 p.c. for Vancouver. The same was broadly true at the third quartile level where the range of variation extended from 72 p.c. for Halifax to 94 p.c. for Saskatoon. At the first quartile level, however, tenants appeared at a greater disadvantage with corresponding percentages scattered from 49 for Regina to 79 for Three Rivers. Similar percentages for 1936 covering Prairie cities showed little change in relationships at third quartile levels, but tenant median and first quartile values dropped appreciably in relation to earnings levels for corresponding owner groups. Tenant median earnings values in 1936 were from 65 p.c. to 77 p.c. of those for owner households, while lower quartile value proportions for tenants dropped sharply to percentages ranging from 22 to 62.

Median earnings values for owner households were usually about $300 above those for tenant households in 1931. Differences ranged from $669 for Halifax down to $155 for Vancouver. Earnings for the latter showed very little difference as between tenant and owner households in marked contrast with Halifax and Regina where differences at all three levels of investigation exceeded $500 per household. Median earnings per tenant household ranged from $999 up to $1,437, with corresponding figures for owners scattered between $1,281 and $1,849. Third quartile earnings values for owner families were usually between $600 and $800 above the median; for tenant families, between $400 and $700 above. At the first quartile, owners dropped between $400 and $600 below the median and tenants usually from $450 to $600. Owner family earnings at the first quartile ranged from $754 to $1,296, falling below $1,000 in four cities. Tenant family earnings at this level varied from $497 to $1,012. By 1936, tenant family earnings at the first quartile in Prairie cities were all below $500, with corresponding owner figures between $749 and $890. Median tenant earnings centred around $950 with owner families between $1,267 and $1,478. Prairie earnings averages in 1931 compared favourably with those in Eastern Canada but there is reason to believe they may have suffered to a greater extent during the subsequent years of depression.

QUARTILE DISTRIBUTION OF FAMILY EARNINGS FOR OWNER AND TENANT HOUSEHOLDS IN SPECIFIED CITIES, 1931 AND 1936.

City	Upper Limit of Earnings for 25 p.c. of Households (1st quartile)		Upper Limit of Earnings for 50 p.c. of Households (2nd quartile or mediaa)		Upper Limit of Earnings for 75 p.c. of Households (3rd quartile)	
	Owners	Tenants	Owners	Tenants	Owners	Tenants
	$	$	$	$	$	$
1931						
Halifax	1,251	677	1,840	1,171	2,634	1,883
Three Rivers	921	725	1,459	1,165	2,178	1,732
Montreal	1,197	805	1,653	1,262	2,510	1,864
Verdun	1,296	1,012	1,758	1,368	2,446	1,825
Toronto	1,214	978	1,849	1,437	2,847	2,158
Hamilton	924	699	1,429	1,161	2,125	1,584
Brantford	754	497	1,281	999	1,947	1,482
Winnipeg	1,096	687	1,585	1,200	2,464	1,972
Regina	1,192	582	1,828	1,325	2,644	1,991
Saskatoon	1,084	814	1,605	1,413	2,245	2,120
Calgary	1,187	790	1,666	1,314	2,399	1,985
Edmonton	1,134	739	1,578	1,294	2,216	1,862
Vancouver	999	784	1,479	1,324	2,119	1,926
Victoria	1,102	758	1,555	1,260	2,131	1,822
1936						
Winnipeg	867	405	1,478	939	2,124	1,394
Regina	810	181	1,388	983	2,028	1,541
Saskatoon	749	461	1,364	1,044	1,939	1,615
Calgary	890	241	1,390	939	1,926	1,554
Edmonton	823	231	1,267	819	1,795	1,340

Turning from relative levels of earnings for owner and tenant families to the ranges of dispersion about central values, it was found that in Western Canada tenant earnings revealed a greater degree of scatter than those for owners. In the East there was no such clear-cut distinction. Western third quartile tenant earnings values were from 4 p.c. to 17 p.c. farther above median values than was the case for owner earnings data. Conversely, Western first quartile tenant earnings were from 3 p.c. to 21 p.c. lower with respect to their median values than corresponding values for owners. In 1936 the range between medians and quartiles among tenant households was considerably wider, particularly in the lower half of wage-earner tenant households. As intimated above, there was no prevailing difference in Eastern cities. In some cases there was much less dispersion apparent in tenant than in owner earnings above the median, but more below it. This was true of Hamilton and Brantford.

Size, Earnings and Rooms per Person for Tenant Families Below the First Earnings Quartile.—Data relating to size of families, earnings and rooms per person below the first earnings quartile were examined for Three Rivers, Hamilton and Regina. These cities were chosen because of the wide variety of conditions they represented with respect to geographical, racial and other factors. Tenant families in this earnings group appeared to be less favourably situated than those of owners with respect to rooms per person and earnings per person. The proportion of large families in the tenant group was slightly lower and the average number of persons per family also was fractionally smaller, except in Three Rivers. The significance of these findings may be better appreciated if the first quartile earnings figures are kept in mind and it is realized that 25 p.c. of owner and tenant families in the sample reported earnings of less than these amounts.

City	First Earnings Quartile	
	Owners	Tenants
	$	$
Three Rivers	921	725
Hamilton	924	699
Regina	1,192	582

There was no typical size for families below the first earnings quartile, although two-, three- and four-person families were most numerous. The percentages of families with more than four persons, however, were relatively high and, of course, the proportion of individuals much greater still.

City	Families below First Earnings Quartile					
	Average Persons per Family		P.C. of Families with More than 4 Persons		Persons in Families of More than 4 Persons as a P.C. o All Persons in the Group	
	Owners	Tenants	Owners	Tenants	Owners	Tenants
Three Rivers	5·13	5·49	53	57	71	75
Hamilton	4·34	4·30	42	36	62	55
Regina	4·44	4·25	43	34	60	53

There was definite evidence of crowding among Three Rivers and Regina tenant families which showed an unmistakable relationship to the amount of family earnings. Since 25 p.c. of all families in the sample were examined, it would be reasonable to expect the families below the first earnings quartile would form 25 p.c. of the total sample in each room group—if earnings were unrelated to crowding. Actually, percentages were highest in the groups below one room per person and declined irregularly in the higher groups. This tendency was more pronounced in tenant than in owner distributions and it was most marked among Regina tenants for whom the first earnings quartile was the lowest shown. The percentages of families with less than one room per person are shown following.

City	P.C. of Families below First Earnings Quartile with Less than One Room per Person	
	Owners	Tenants
Three Rivers	32	51
Hamilton	19	31
Regina	38	73

Considering the size of families in this group in relation to family earnings noted above, it is inevitable that earnings per person should be small. Earnings per person tend to make the position of the large family appear overly dark, but it is a fairer measure of comparison than earnings per family in view of the wide variation in number of persons per family unit. The proportion of families with annual earnings of $100 or less per person was sharply higher for tenant than for owner households, while $200 per person or less included the great majority of all cases in the group.

City	P.C. of Families below First Earnings Quartile with Specified Earnings per Person			
	$100 or less		$200 or less	
	Owners	Tenants	Owners	Tenants
Three Rivers	48	71	82	89
Hamilton	39	60	72	86
Regina	47	76	72	96

Distribution of Owner and Tenant Households According to Earnings.—General characteristics of household earnings revealed by arranging samples into $400 groups have already been commented upon. There are sufficient differences between owner and tenant earnings distributions, however, to justify a brief special comment. In the majority of cases there was little observable difference in 1931 between the earnings groups in which the highest proportion of owner and tenant families were concentrated. Concentration centred between $1,200 and $1,600 for both owners and tenants in most cities and the pronounced advantage of owner families, noted earlier from an examination of median earnings values, was obscured. However, these distributions did show clearly the tendency for tenant families to be most numerous in the lower earnings groups. The general contour of owner frequency distributions more nearly

PERCENTAGES OF OWNER AND TENANT FAMILIES AT SPECIFIED EARNINGS LEVELS, 1931

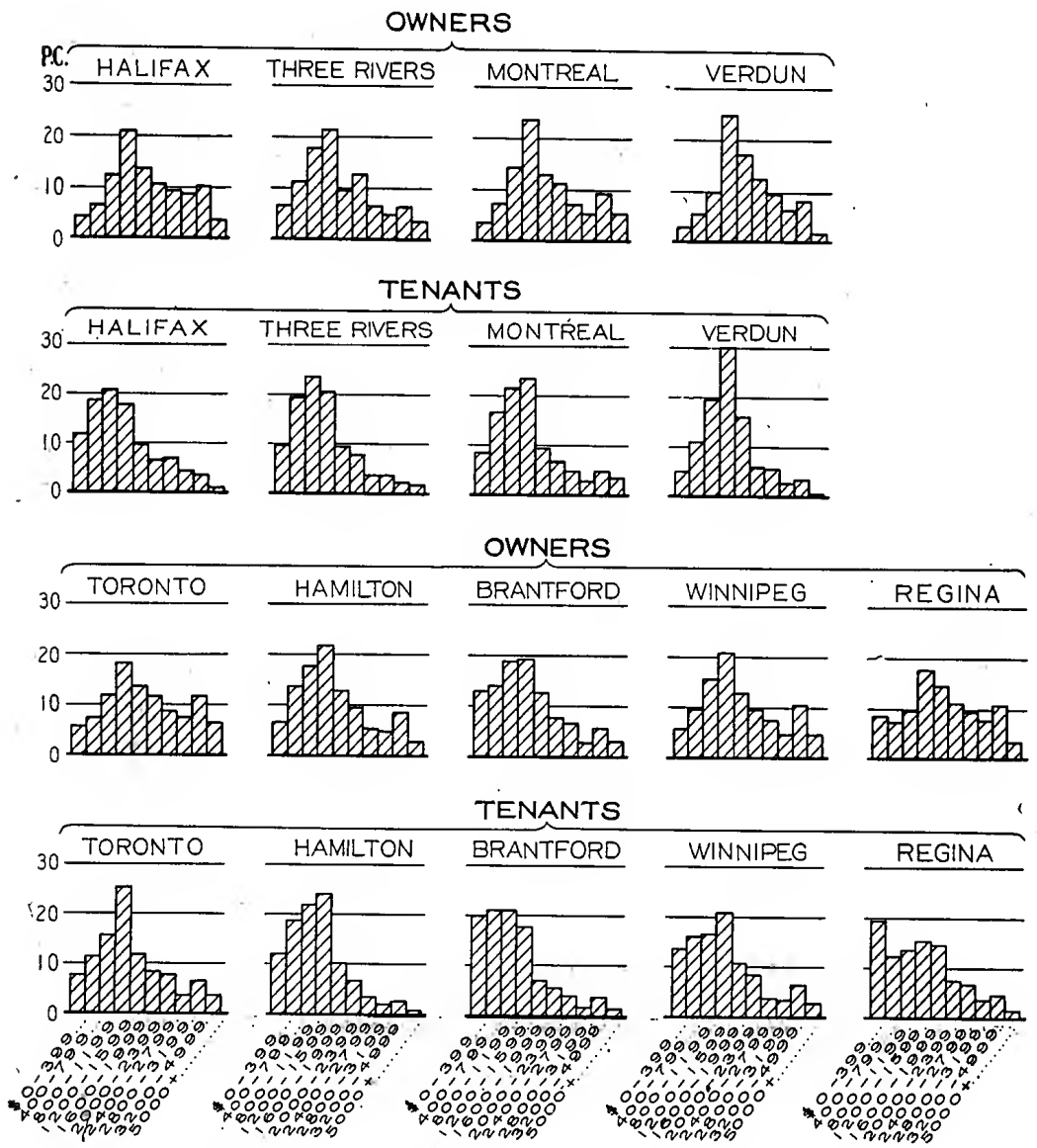


Chart 10 (First part)

approached a normal bell-shaped curve than did tenant frequencies. Distributions for 1936 in Prairie cities showed a more definite concentration around a central value for owner families, but definitely less for those of tenants. They also revealed a highly abnormal number of both types of families with earnings of less than $400 per year. Percentages of owners in this group ranged from 7 to 18. Under such conditions ownership is nominal and families thus situated must be dependent upon savings or a change in economic fortune for the maintenance of their tenure status. More than one-quarter of the tenant families in samples for Prairie cities also reported earnings of less than $400 for 1936. Both average earnings and percentages of families receiving obviously inadequate income, *i.e.*, less than $400 per year, point to less satisfactory economic circumstances in 1936 than in 1931.

PERCENTAGES OF OWNER AND TENANT FAMILIES AT SPECIFIED EARNINGS LEVELS, 1931 AND 1936

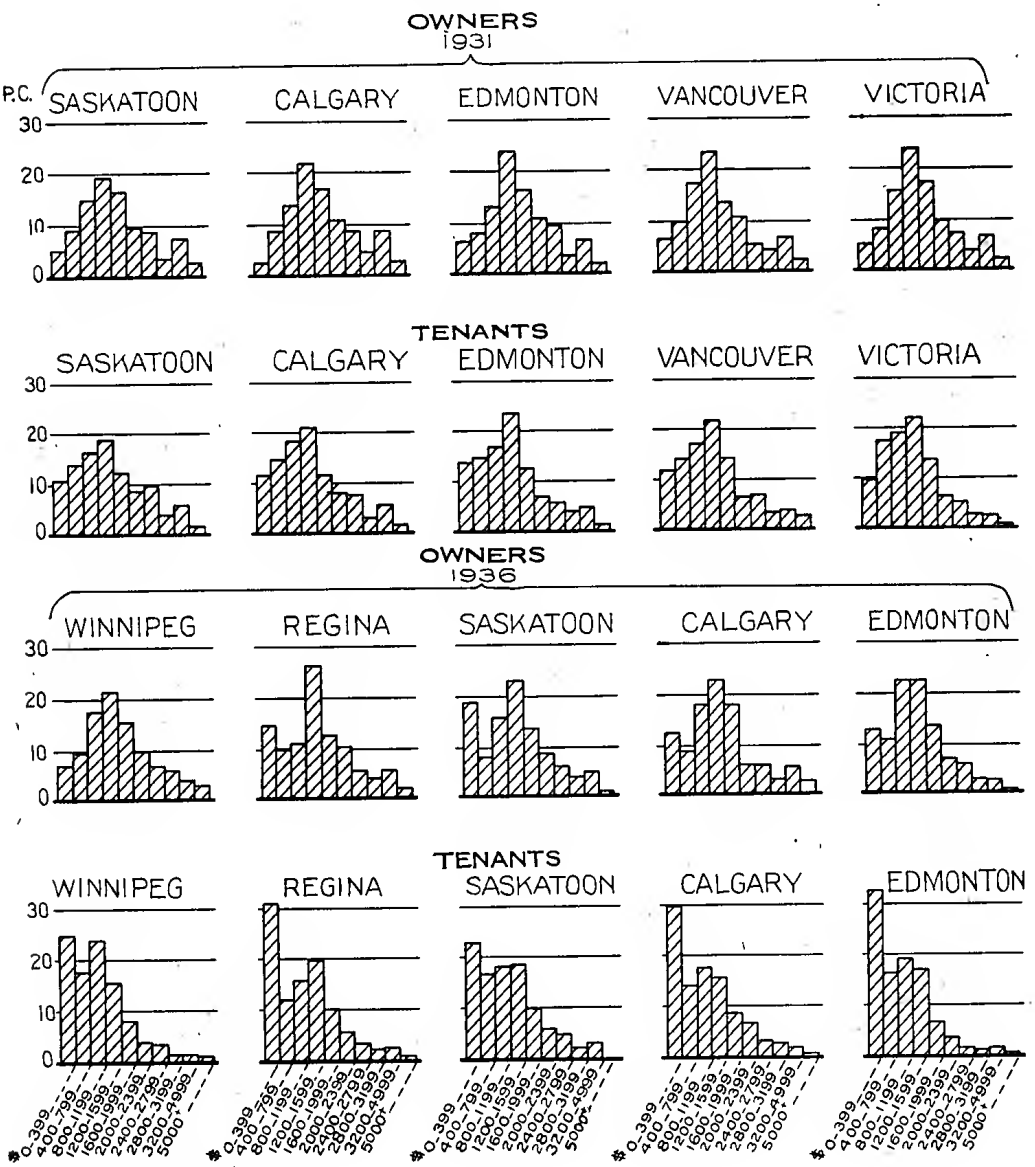


Chart 10 (Second part)

PERCENTAGE EARNINGS DISTRIBUTION OF OWNER HOUSEHOLDS IN SPECIFIED CITIES, 1931 AND 1936

City	$0-399	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799	$2,800-3,199	$3,200-4,999	$5,000 and over
1931	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Halifax	4	7	12	21	14	10	9	9	10	4
Three Rivers	7	11	18	21	10	13	6	5	6	3
Montreal	4	7	14	24	13	11	7	6	9	5
Verdun	3	6	10	25	17	13	10	6	8	2
Toronto	6	7	12	18	13	11	9	7	11	6
Hamilton	6	13	18	22	13	9	5	4	8	2
Brantford	13	14	19	19	12	7	6	2	5	3
Winnipeg	5	9	15	21	13	10	8	5	10	4
Regina	8	7	10	18	14	11	10	8	11	3
Saskatoon	5	9	15	20	17	10	9	4	8	3
Calgary	3	9	14	22	17	10	9	4	9	3
Edmonton	6	8	13	24	17	11	10	3	6	2
Vancouver	6	10	17	23	14	11	5	4	7	3
Victoria	5	8	16	24	17	10	7	4	7	2
1936										
Winnipeg	7	9	18	21	16	10	7	5	4	3
Regina	15	10	11	26	12	10	5	4	5	2
Saskatoon	18	8	16	23	13	8	6	4	4	1
Calgary	12	9	18	22	17	6	6	3	5	2
Edmonton	13	11	22	22	13	7	6	3	2	1

PERCENTAGE EARNINGS DISTRIBUTION OF TENANT HOUSEHOLDS IN SPECIFIED CITIES, 1931 AND 1936

City	$0-399	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799	$2,800-3,199	$3,200-4,999	$5,000 and over
1931	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Halifax	12	19	20	18	10	6	7	4	3	1
Three Rivers	10	19	23	20	9	8	4	3	2	2
Montreal	8	17	21	23	9	6	5	3	5	3
Verdun	5	11	20	30	16	6	5	3	3	1
Toronto	8	11	15	25	12	8	8	4	6	3
Hamilton	12	19	21	24	10	6	3	2	2	1
Brantford	20	21	21	17	7	5	4	1	3	1
Winnipeg	13	16	16	21	10	8	4	3	6	3
Regina	19	12	14	15	15	8	7	4	5	1
Saskatoon	11	14	16	19	12	8	10	4	5	1
Calgary	11	14	18	21	11	8	8	3	5	1
Edmonton	13	14	17	23	12	7	5	4	4	1
Vancouver	12	14	17	21	14	6	6	3	4	3
Victoria	10	17	19	22	14	6	5	3	3	1
1936										
Winnipeg	25	18	24	15	8	4	3	1	1	1
Regina	31	12	15	19	10	5	3	2	2	1
Saskatoon	22	16	18	18	10	6	5	2	3	-
Calgary	30	14	17	15	8	7	3	3	2	1
Edmonton	33	16	19	17	7	4	2	1	1	-

Supplementary Family Earnings.—In the foregoing analysis, earnings of the family have been treated as a unit. In a large proportion of families, however, there were two or more members with earnings recorded. Usually the supplementary amounts were small when compared individually with those of the principal wage-earners, but all supplementary earnings per family formed a significant proportion of the total, particularly in the higher earnings brackets. The purpose of this section is to indicate the importance of supplementary wage-earners in the earnings structure of the type of household sampled, *i.e.*, one-family wage-earner households with husband and wife living together as joint heads.

The proportion of households with supplementary wage-earners rose irregularly in successive earnings groups until total earnings were from $2,200 to $3,000 per annum. The highest group proportions of households with supplementary wage-earners usually ranged between 50 p.c. and 80 p.c. from Winnipeg east and from 40 p.c. to 60 p.c. in cities farther west. In earnings groups below $1,200 the proportion seldom exceeded 20 p.c.

PERCENTAGES OF FAMILIES WITH MORE THAN ONE WAGE-EARNER AT PROGRESSIVE EARNINGS LEVELS, 1931

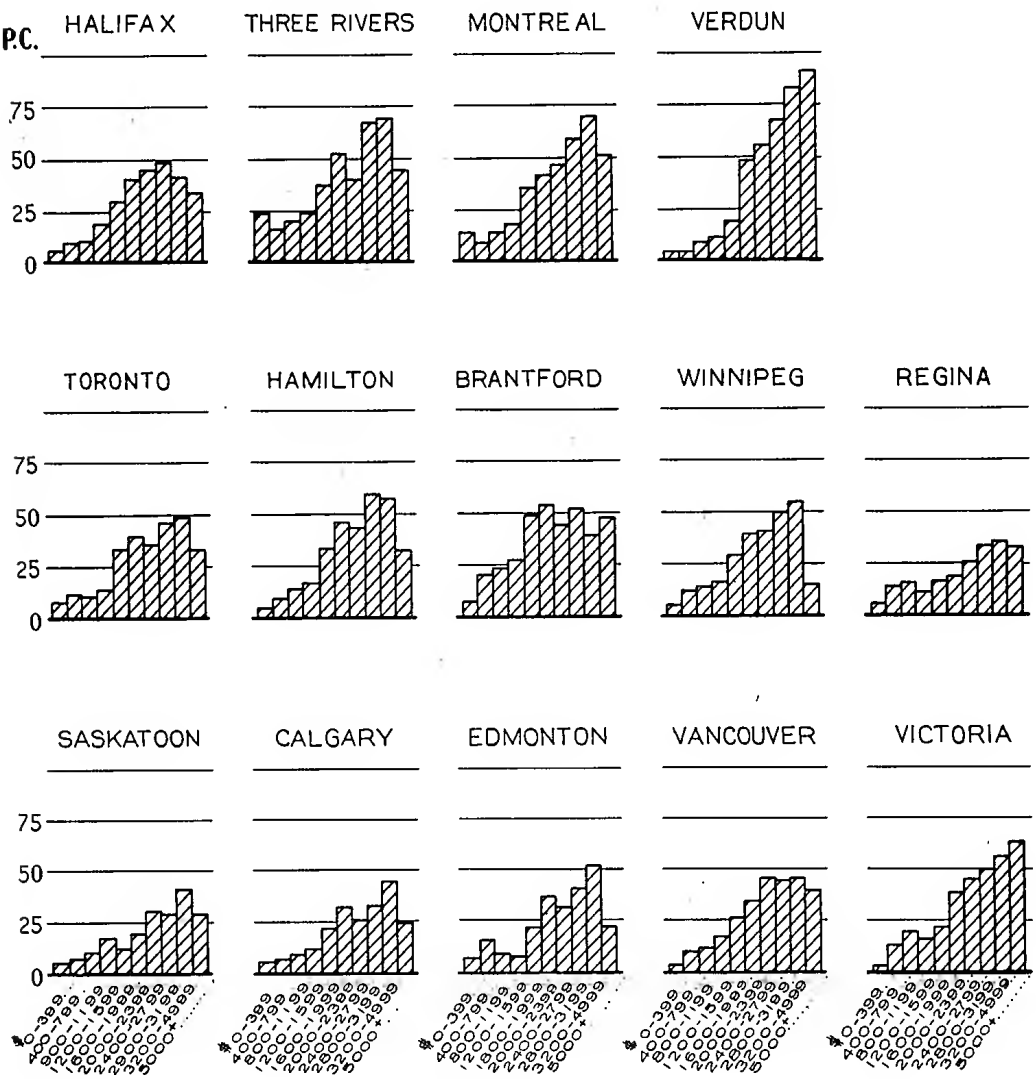


Chart 11

The substantial proportion of this type of household with supplementary wage-earners, commonly exceeding one-fifth of the households sampled, might well be borne in mind when use is being made of census records of earnings per person. As noted above, the great majority

of these earners formed parts of households with earnings in excess of $1,200, yet individually their annual earnings fell well below that figure. The significance of comparatively small amounts is altered by the fact that these supplementary earners were members of a normally constituted household. As such, their economic position was presumably stronger and more stable than if they were independent wage-earners. The number of supplementary wage-earners in owner households was approximately double the number in tenant households.

PERCENTAGE OF FAMILIES WITH MORE THAN ONE WAGE-EARNER AT PROGRESSIVE EARNINGS LEVELS IN SPECIFIED CITIES, 1931

City	$0-399	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799	$2,800-3,199	$3,200-4,999	$5,000 and over
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Halifax	6	10	11	19	30	41	45	48	42	34
Three Rivers	24	16	20	24	37	52	39	67	69	44
Montreal	14	9	14	18	36	42	47	59	70	51
Verdun	4	4	9	12	20	49	56	68	83	92
Toronto	8	12	11	14	33	40	36	47	49	33
Hamilton	5	9	14	17	33	46	43	59	57	32
Brantford	7	20	23	27	49	53	44	52	39	48
Winnipeg	5	12	14	16	29	40	41	50	55	15
Regina	6	14	16	12	17	19	26	34	36	33
Saskatoon	5	7	10	17	12	19	30	28	40	28
Calgary	5	6	8	11	21	31	25	32	43	24
Edmonton	6	15	8	7	21	36	31	40	51	22
Vancouver	3	10	11	17	26	34	45	44	45	39
Victoria	2	13	19	16	23	38	45	50	56	63

The amounts of supplementary relative to total earnings were examined at two earnings levels, the first between $800 and $1,200 and the second between $2,800 and $5,000. The first range was subdivided evenly into two sections. In the two lower groups the percentages of supplementary to total earnings per household ranged from 1·5 to 12·2. With the exception of Verdun, percentages for Eastern cities were concentrated in the upper half of this range. This was also true of Western cities with the exception of Calgary. City percentages for the households with earnings of between $2,800 and $3,000 were at much higher levels, ranging from 7·1 for Saskatoon to 47·9 for Three Rivers. In all cities except Saskatoon, proportions of supplementary earnings in this group were several times higher than at the lower level and particularly important in cities of the province of Quebec.

Actual averages of supplementary earnings reported may be observed along with total household earnings averages in the following statement. Supplementary earnings averages have been computed in two ways, first in relation to all households in the group, and again only in relation to households reporting such earnings.

SUPPLEMENTARY EARNINGS AT SPECIFIED FAMILY EARNINGS LEVELS, SPECIFIED CITIES, 1931

City	Average Supplementary Earnings per Family								Supplementary Earnings as P.C. of All Family Earnings			
	For Families with Supplementary Wage-Earners				For All Families							
	$800-999	$1,000-1,199	$2,800-2,999	$3,000-4,999	$800-999	$1,000-1,199	$2,800-2,999	$3,000-4,999	$800-999	$1,000-1,199	$2,800-2,999	$3,000-4,999
Halifax	$348	$928	$1,246	$1,738	$34	$117	$897	$693	4	11	31	20
Three Rivers	287	487	1,773	2,111	45	122	1,379	1,391	5	12	48	39
Montreal	349	483	1,364	1,816	46	73	941	1,190	5	7	33	33
Verdun	253	455	1,464	1,856	14	51	1,098	1,418	2	5	38	39
Toronto	409	634	1,258	1,775	47	73	991	787	5	7	34	22
Hamilton	543	524	1,193	1,733	80	64	1,050	858	9	6	37	24
Brantford	437	465	1,181	1,830	81	131	945	748	9	12	33	21
Winnipeg	477	466	1,069	1,620	68	66	770	810	8	6	27	22
Regina	338	594	1,219	1,595	60	89	522	543	7	8	18	15
Saskatoon	280	488	516	1,531	24	56	201	535	3	5	7	15
Calgary	243	559	1,282	1,768	28	27	350	718	3	3	12	21
Edmonton	427	556	1,240	1,751	20	62	853	753	2	6	30	21
Vancouver	375	549	1,467	1,849	32	85	926	755	4	8	33	21
Victoria	456	470	1,171	1,702	72	106	585	930	8	10	20	25

The material submitted above seems quite sufficient to warrant the conclusion that the proportion of supplementary wage-earners and earnings both increase rapidly at progressively higher earnings levels up to $3,000; and further that this tendency is stronger in Eastern than in Western Canada. At no earnings level, however, do supplementary amounts form a preponderant proportion of total earnings. In the highest earnings ranges it seems probable that the proportion of supplementary wage-earners and earnings would decline.

Earnings in Relation to Adequacy of Accommodation.—The term "adequacy" necessitates an arbitrary dividing line to separate households considered to be inadequately housed from those with adequate accommodation. One room per person has been widely accepted as a basis of division in housing studies for Canada and the United States, although size of rooms, light, ventilation and heating are other factors scarcely less important. Unfortunately they are difficult to record statistically.

The data utilized in this section have been compiled from tenant samples in the same three cities chosen for an examination of families below the first earnings quartile. They differ radically with regard to earnings, dwellings, racial characteristics and extent of industrialization. It is, therefore, definitely significant that a high degree of uniformity of tendency in data related to earnings and adequacy of accommodation was clearly apparent. The averages shown on page 480 following should be considered in relation to the proportion of the samples they represent. The slightly erratic nature of progressions and regressions in these averages appears attributable to the small number of cases falling in groups at either end of the frequencies that are used.

Crowding is a phenomenon much more common in tenant than in owner households. Proportions of tenant households with less than one room per person in 14 of the larger Canadian cities exceeded similar proportions for owners by a wide margin in nearly every case. Tenant percentages of households in this class ranged from 15 to 41, with owner percentages varying between 8 and 39. Tenant percentages for Three Rivers, Hamilton and Regina, the cities upon which subsequent analysis has been based, showed percentages at both extremes and owner percentages also differed widely. This may be observed below.

PERCENTAGE OF HOUSEHOLDS WITH LESS THAN ONE ROOM PER PERSON, SPECIFIED CITIES, 1931

City	Owners	Tenants
	p.c.	p.c.
Halifax	15	38
Three Rivers	*39*	*41*
Montreal	21	24
Verdun	22	28
Toronto	9	17
Hamilton	*12*	*19*
Brantford	9	15
Winnipeg	22	32
Regina	*21*	*41*
Saskatoon	17	33
Calgary	12	31
Edmonton	16	34
Vancouver	17	25
Victoria	8	17

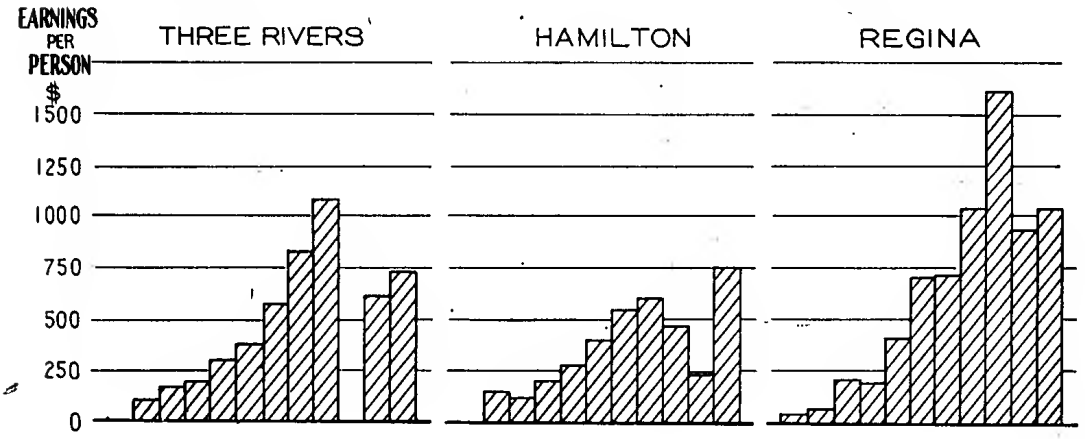
In the following statement, which shows data for the three cities mentioned above, several points of difference and similarity are discernible. Three Rivers tenant families above the one-room-per-person level correspond closely in size to Hamilton families living in homes of the same number of rooms, although the average number of persons per tenant household in Three Rivers is 5·5 as compared with 4·1 in Hamilton. The same is also broadly true of Regina, with an average of 4·1 persons per household. The average size of households with less than one room per person was 7·7 for Three Rivers, 6·4 for Hamilton and 5·0 for Regina. Two points revealed by this comparison stood out, *viz.*, the size of crowded families was well above city averages, while the size of families at different space levels above the "adequacy" dividing line was approximately the same.

AVERAGES OF PERSONS PER FAMILY, EARNINGS PER PERSON AND RENT PER ROOM IN RELATION TO ROOMS PER PERSON, 1931
(FROM A SAMPLE OF THREE RIVERS, HAMILTON AND REGINA TENANTS)

Rooms per Person	Families in Sample			Average Persons per Family			Average Earnings per Person per Annum			Average Rent per Room		
	Three Rivers	Hamilton	Regina	Three Rivers	Hamilton	Regina	Three Rivers	Hamilton	Regina	Three Rivers	Hamilton	Regina
							$	$	$	$	$	$
Under 0·25	-	-	3	-	-	5·7	-	-	44	-	-	12·7
0·25-0·49	10	8	39	10·3	6·4	5·5	98	144	74	3·9	6·4	7·4
0·50 0·74	82	71	133	8·0	6·4	4·5	154	117	208	3·7	4·8	8·2
0·75-0·99	51	60	58	6·5	6·5	5·9	176	192	190	3·6	4·4	6·4
1·00-1·49	122	230	191	4·6	4·5	3·8	286	271	414	4·1	4·9	8·2
1·50-1·99	39	153	77	3·8	3·3	3·2	372	395	703	3·9	5·5	9·2
2·00-2·49	27	90	43	2·6	2·7	2·7	558	538	706	4·5	5·8	8·0
2·50-2·99	11	45	20	2·3	2·1	2·2	817	595	1,038	5·3	5·1	7·7
3·00-3·49	4	24	5	2·0	2·1	2·2	1,063	467	1,613	4·7	4·5	8·7
3·50-3 99	-	2	1	-	2·0	2·0	-	240	930	-	3·2	6·4
4·00-4·49	1	2	2	2·0	2·0	2·0	600	750	1,030	6·3	2·5	5·3
4·50-4·99	1	-	-	2·0	-	-	720	-	-	2·0	-	-
TOTAL	348	715	572	5·5	4·1	4·1	239	297	359	4·0	5·1	8·1
Under one room per person	143	139	233	7·7	6·4	5·0	156	151	176	3·7	4·6	7·5
One room or more per person	205	576	339	4·0	3·5	3·4	351	360	543	4·2	5·2	8·4

Averages of earnings per person at different room levels showed a remarkably steady increase up to the points where there were too few cases to make a reliable average. Although Regina averages were almost always above those for the two Eastern cities, Three Rivers figures in the higher space groups compared favourably with those for Hamilton, yet the city average for Three Rivers at $239 per person was $58 lower than that for Hamilton. In all three cities average earnings per person were decidedly lower below the one-room-per-person level than above it. These figures were $156 and $351 for Three Rivers, $151 and $360 for Hamilton and $176 and $543 for Regina. Here again, comparisons at corresponding levels caused differences between Three Rivers and Hamilton to narrow surprisingly and the former actually possessed a slight advantage.

LEVELS OF TENANT EARNINGS PER PERSON AS ROOMS PER PERSON INCREASE. THREE RIVERS, HAMILTON AND REGINA, 1931



LEVELS OF RENT PER ROOM AS ROOMS PER PERSON INCREASE. THREE RIVERS, HAMILTON AND REGINA, 1931

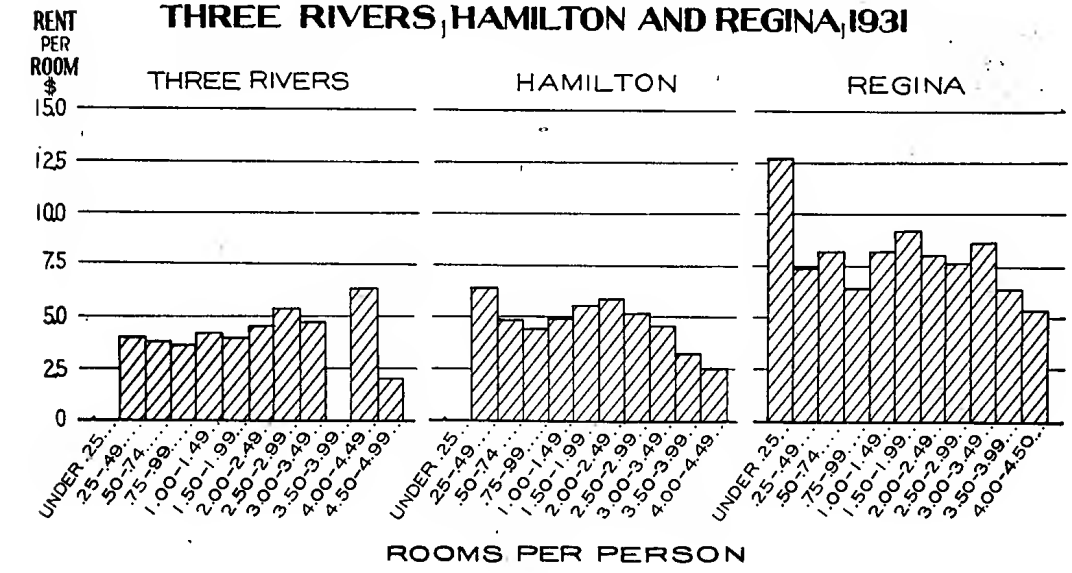


Chart 12

Average rent per room was examined to obtain some notion of qualitative differences in housing accommodation in relation to earnings and rooms per person. The comparison was complicated by the fact that rent per room tends to decrease as the size of the home increases even if qualitative factors can be held constant. The cost of bathroom fixtures and kitchen equipment, for example, is as high for an ordinary four-room apartment as for a six-room apartment and other costs tend also to become less in larger dwellings when measured on a per room basis. However, in all three cities, rent per room moved progressively higher as rooms per person increased, until a level of from 1·50 to 2·50 rooms per person was reached. Above that range, rent per room showed definite signs of decreasing and detailed examination of records at this turning point showed an appreciable increase in the size of homes, supporting the contention advanced above. Presumably in the lower room-per-person groups qualitative differences were great enough to smother this tendency. Again using one room per person as a dividing line, it was found that rent per room above this level was higher than in the lower group of households, despite the decline in top brackets noted above. Averages below and above the one-room-per-person boundary were $3·7 and $4·2 for Three Rivers, $4·6 and $5·2 for Hamilton and $7·5 and $8·4 for Regina.

The foregoing comparisons furnish convincing evidence of the close relationship between earnings and adequacy of accommodation. Earnings per person and rooms per person not only increased together but rents provided evidence of qualitative improvement in accommodation as earnings rose.

Earnings and Rentals.—Surveys of family expenditure in Canada and the United States have indicated that the proportion of income required for the shelter of tenant families usually averages between 15 and 25 p.c. Averages of such proportions hide a variable tendency at different income levels which Engel discovered many years ago, *viz.*, that the proportion of income spent on necessities such as shelter tends to decline gradually in the higher income groups. There are appreciable differences in the rate of this decline, depending upon the supply of housing accommodation and upon housing standards. Samples of census earnings and rentals data for 1931 and 1936 have been examined to determine the average proportion of earnings expended in the form of rent in various Canadian cities and to scrutinize any appreciable difference in earnings-rent ratios at progressive earnings levels. The relation between rents and rooms per person at different earnings levels has also been noted.

City average ratios of family rents to earnings ranged from 19 p.c. to 27 p.c. according to 1931 data from the fourteen centres examined. Corresponding 1936 percentages for Prairie cities reflected changing relationships between rents and earnings. In Winnipeg and Edmonton, 1936 ratios were 3 p.c. and 4 p.c. higher respectively; Regina and Calgary figures were 1 p.c. lower; and the Saskatoon ratio was 5 p.c. lower than in 1931. Lower ratios resulted from a sharper decline in rents than in earnings between 1931 and 1936 and, conversely, higher ratios pointed to rents better maintained than earnings. Where the latter condition existed, there was a noticeable decline in the average number of rooms per person in 1936, while lower rent-earnings ratios were accompanied by increases in the number of rooms per person.

The narrow range of city average percentages was accounted for to a considerable extent by the fact that rents were low where earnings were low and vice versa. The magnitude of ratios thus did not appear significant as a measure of economic well-being which varied widely from city to city according to data presented in a preceding section.* Three Rivers with a rental expenditure of 19 p.c. of earnings had a larger proportion of earnings to spend upon other needs than any city studied except Verdun, yet earnings per person averaged lowest in the list. Likewise, Three Rivers indexes of purchasing power over necessities and other indexes showing command over goods of the luxury type ranked lowest in the list for the 14 cities examined. Corresponding Toronto purchasing power indexes were the highest in the group, although the 1931 ratio of rents to earnings was 26 p.c., among the largest in Canada. Ratios of rent per room to earnings per person were appreciably different from those based on family data in cases where the number of rooms per person was above average. The Toronto ratio reckoned on this basis was 19 p.c., almost the same as for Three Rivers. It is probable that density of population was an important factor in determining these proportions since Victoria and Brantford showed very low ratios of 15 p.c. and 17 p.c. respectively. However, the low percentage of 17

* See pages 466 and 467.

for Montreal, the largest city in Canada, indicated clearly that size was not the only consideration. Housing standards, the size of the city and the supply of homes appeared to be inextricably involved in determining rent-earnings ratios.

AVERAGE EARNINGS AND RENTS PER MONTH OF TENANT HOUSEHOLDS IN SPECIFIED CITIES, 1931 AND 1936

City	Average Monthly Earnings per Household	Average Monthly Rent per Household	Ratio of Household Rents to Earnings	Ratio of Earnings per Person to Rent per Room
	$	$	p.c.	p.c.
1931				
Halifax	113	26	23	23
Three Rivers	109	21	19	20
Montreal	128	27	21	17
Verdun	122	23	19	18
Toronto	144	38	26	19
Hamilton	101	26	26	21
Brantford	95	22	23	17
Winnipeg	128	33	25	22
Regina	121	33	27	27
Saskatoon	129	33	26	24
Calgary	122	31	25	23
Edmoaton	116	26	22	21
Vancouver	124	30	25	20
Victoria	112	22	20	15
1936				
Winnipeg	86	24	28	24
Regina	86	22	26	25
Snskatoon	94	20	21	19
Calgary	86	21	24	23
Edmonton	74	19	26	25

Thc choice of a satisfactory earnings interval for analysis of rent and earnings presented difficulties. A $200 interval was discarded because of erratic fluctuations in percentages computed on this basis. These tended to obscure a strong underlying tendency for rent percentages to fall as earnings increased. This appeared clearly in data based upon a $400 interval as may be observed from the statement following. However, both these intervals smoothed out a break in continuity appearing in $100 intervals from $400 to $1,000. It came most frequently in family earnings groups between $800 and $900 and occasionally in the two groups preceding. In each city, percentages of rents to earnings showed a pronounced decline within this earnings range in all save one $100 interval for which the percentage was much higher than the trend for the other five groups would have indicated. The significance of this break is conjectural and not subject to definite interpretation on the basis of census statistics but its occurrence in all 14 of the cities examined seems to place it beyond the limits of chance coincidence. Presumably it marked a level of earnings which made possible the achievement of something beyond the bare necessities of life; either a transition range between relief living standards and independent livelihood or a sensitiveness to environment which focussed attention upon better living quarters when earnings permitted improvement. Data presented later point to wide differences in emphasis placed upon housing among low-paid wage-earners, making it difficult to check either of these premises. The narrow range of earnings in which the break occurred would point to the advisability of caution in identifying it with an increase in emphasis upon housing. If this existed, it would likely be manifest over a wider range of earnings, and would, of course, be contrary to Engel's law. Evidence of increasing emphasis upon housing accommodation in the middle earnings groups which falls within the limits of a general statement of Engel's law is presented in a later section on rent per room and rooms per person at progressive earnings levels.

As may be noted from the second statement of page 485, percentages between $800 and $1,199 in which most of the continuity breaks occurred were in border-line territory just above levels ordinarily considered as a minimum for a normally constituted family. These percentages ranged from 23·4 to 36·3. Percentages in earnings groups below $800 were significant mainly as an indication of relative degrees of poverty. In the lowest earnings group for Prairie cities percentages in 1936 were much higher than in 1931, while above the $800 level they were appreciably lower.

Although the abnormality of rent-earnings ratios for families with earnings of less than $800* per year is the most outstanding feature of this statement, it contains others of considerable significance. The data, of course, conform to the pattern revealed by earlier studies, *i.e.*, they show that the proportion of earnings devoted to rents declines as earnings increase. However, the slow rate of this decline tends to hide the extent of the absolute increase in rents as earnings move progressively higher. Between the earnings groups centering around $1,400 and $2,200, rentals expressed as a proportion of earnings declined on an average of not more than 5 p.c. and frequently the figure was substantially less. Rents at the lower level formed approximately 25 p.c. of total earnings and about 20 p.c. at the higher level. This meant average rental expenditures of $350 per annum and $440 per annum respectively at these earnings levels. Thus a 5 p.c. decrease in the proportion of rent to earnings meant an increase of over 25 p.c. in actual expenditures for shelter and presumably a material improvement in the class of housing accommodation obtained. Averages of rooms per person and rent per room both showed appreciable increases within this earnings interval.

The proportion of rent to earnings, particularly in earnings groups above $1,200 in which tenants have a greater range of alternatives in spending their income, depends upon several factors of which housing standards and the supply of accommodation are the most important. Both of these are reflected in rental levels and in cities such as Halifax, Toronto and Regina where rents were relatively high in 1931, percentages declined slowly in the higher earnings groups. For other places with relatively low rentals, including Three Rivers, Brantford and Victoria, percentages formed a smooth descending arc in contrast with the almost flat course followed by percentages in the high rental cities. Unfortunately it is difficult to evaluate the importance of housing standards and supply of housing accommodation. Appraisals of living standards, presented in a preceding section, would place Halifax and Three Rivers at lower levels than the other cities grouped with them above. The shape of the Halifax rent-earnings ratio curve under such circumstances presumably would be attributable mainly to a limited supply of better class housing. The Three Rivers curve might reasonably be interpreted as pointing to relatively little variation in housing standards as earnings increased. The behaviour of rent per room and rooms per person in successive earnings groups supports this conclusion. These cases are cited to illustrate the difficulty of placing qualitative interpretations upon rent-earnings ratios.

The 1936 percentages were much higher than those for 1931 in the lowest family earnings group, under $400 per year, but dropped until they were between 4 and 5 p.c. lower in the groups above $1,600. Percentages in 1936 ranging from 131 to 235 where family earnings fell below $400 bore witness of more complete dependence in this group upon organized relief and charity than in 1931. Nor should the lower percentages in higher earnings groups be interpreted as conclusive evidence of better economic circumstances, since it has been established in an earlier section that tenant family average earnings in these cities declined between 1931 and 1936 by more than 30 p.c. The families reporting $1,600, for example, in 1936 generally were not the ones reporting that amount in 1931, when their earnings probably exceeded $2,000. The pairing of 1931 ratios around the $2,000 level with 1936 ratios around the $1,600 level shows percentages approximately the same in both cases for three of the five Prairie cities of over 30,000 population. A stiffer drop in rents between 1931 and 1936 in Regina and Saskatoon than elsewhere on the Prairies pointed to generally more favourable positions in 1936 for tenant families in the upper earnings groups than had existed in 1931.

As illustrated earlier with other data, averages hide variations of considerable significance. For this reason tenant rent-earnings ratios were computed for individual families in two cities, one with a high average rent-earnings ratio and the other with a very low one. These were Regina where tenants spent an average of 27 p.c. of earnings for shelter in 1931 and Victoria where the percentage was only 20. As might be expected, the great majority of high ratios were in the low earnings groups. The high proportions of families paying abnormally large parts of earnings for rent may be observed from the following statement:—

* Page 472 shows that more than 25 p.c. of tenant wage-earner families in many cities received less than this amount in both 1931 and 1936.

DISTRIBUTION OF INDIVIDUAL FAMILY RENT-EARNINGS PERCENTAGES IN REGINA AND VICTORIA CLASSIFIED ACCORDING TO SPECIFIED EARNINGS, 1931

Item	$0-399		$400-799		$800-1,199		Total under $1,200		Total Sample	
	Regina	Victoria	Regina	Victoria	Regina	Victoria	Regina	Victoria	Regina	Victoria
Percentage of families at specified earnings levels...	19	10	12	17	14	19	45	46	100	100
Percentage of cases with rent over 25 p.c. of earnings....	100	100	87	73	62	39	85	65	60	36
Percentage of cases with rent over 35 p.c. of earnings....	95	93	68	49	31	13	69	43	37	20

Nearly half of the families sampled in Regina and Victoria earned less than $1,200 per annum in 1931. Of these, 85 p.c. in Regina and 65 p.c. in Victoria paid out more than one-quarter of all earnings in the form of rent and 69 p.c. and 43 p.c. of families in samples for these respective cities paid more than 35 p.c. of earnings for shelter. More than one-quarter of earnings devoted to this purpose is usually considered abnormal; more than 35 p.c. so expended may be considered as almost positive evidence of economic pressure where earnings are so low. Of all families sampled, one-fifth in Victoria and more than a third in Regina reported rents in excess of 35 p.c. of earnings.

Frequency distributions of individual family rent-earnings ratios for Regina and Victoria provided contrasts and parallels of considerable interest. Differences suggested that this approach might yield valuable results if applied to a more comprehensive investigation. For Victoria, there was little sign of central tendency in rent-earnings ratios in the lower earnings groups, but such a tendency became quite pronounced in groups above $1,600. Presumably, emphasis upon home comfort varied more widely in families with earnings below this figure than where earnings were higher. These variations were doubtless accentuated, however, by the depression, which caused drastic adjustments in the living conditions of many families in the years centering around 1931. The Regina frequency distribution of rent-earnings ratios showed a marked degree of scatter in all earnings groups, although this was perceptibly less in earnings groups above $2,400 per annum.

RENT EXPRESSED AS A PERCENTAGE OF FAMILY EARNINGS AT PROGRESSIVE EARNINGS LEVELS IN SPECIFIED CITIES, 1931 AND 1936

City	$0-399	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799	$2,800-3,199	$3,200-4,999	$5,000 and over
1931	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Halifax	93·7	35·7	24·4	24·2	20·6	19·6	17·9	16·3	19·2	15·7
Three Rivers	99·1	34·3	23·4	19·8	18·1	14·1	16·6	9·4	7·9	9·7
Montreal	100·0	36·6	26·8	21·7	18·8	18·8	17·4	15 9	13·6	14·2
Verdun	103·2	36·6	24·3	20·0	17·7	15·5	13·4	12·1	9·2	10·6
Toronto	188·8	51·3	36·3	28·8	24·4	21·9	23·5	20·8	19·1	16·7
Hamilton	136·2	42·3	28·8	24·0	22·3	19·4	18·5	17·0	13·8	10·4
Brantford	95·2	37·2	24·1	20·9	17·9	16·7	16·7	15·7	13·3	14·2
Winnipeg	118·6	48·3	29·6	26·4	26·3	21·7	25·8	18·7	18·4	13·6
Regina	96·9	48·8	32·2	25·2	26·8	26·2	25·0	20·9	18·3	13·5
Saskatoon	114·9	45·4	33·7	27·2	24·6	23·6	21·4	18·4	15·5	12·8
Calgary	108·9	42·5	33·8	24·3	24·6	20·7	21·3	20·6	16·1	11·5
Edmonton	102·0	38·2	23·7	22·7	21·8	21·0	17·3	17·4	14·1	11·1
Vancouver	139·5	48·7	31·7	24·4	23·2	21·1	19·3	18·3	12·6	11·9
Victoria	95·9	33·1	24·5	19·3	17·1	15·2	15·7	11·8	9·5	8·9
Range for 14 cities	93·7-188·8	33·1-51·3	23·4-36·3	19·3-28·8	17·1-26·8	14·1-26·2	13·4-25·8	9·4-20·9	7·9-19·2	8·9-16·7
1936										
Winnipeg	160·9	35·5	26·6	25·7	22·0	21·1	21·2	17·4	17·5	11·1
Regina	234·9	33·2	23·7	22·8	22·0	20·9	20·7	15·1	13·9	9·9
Saskatoon	131·1	30·2	21·6	20·4	18·9	19·0	17·0	13·4	11·9	-
Calgary	233·5	36·2	24·2	21·0	21·3	17·7	16·2	13·9	12·6	10·2
Edmonton	143·0	33·2	21·9	20·0	19·1	16·6	14·3	15·7	14·1	11·4

RENT AS A PERCENTAGE OF TENANT FAMILY EARNINGS AT PROGRESSIVE EARNINGS LEVELS, 1931 AND 1936

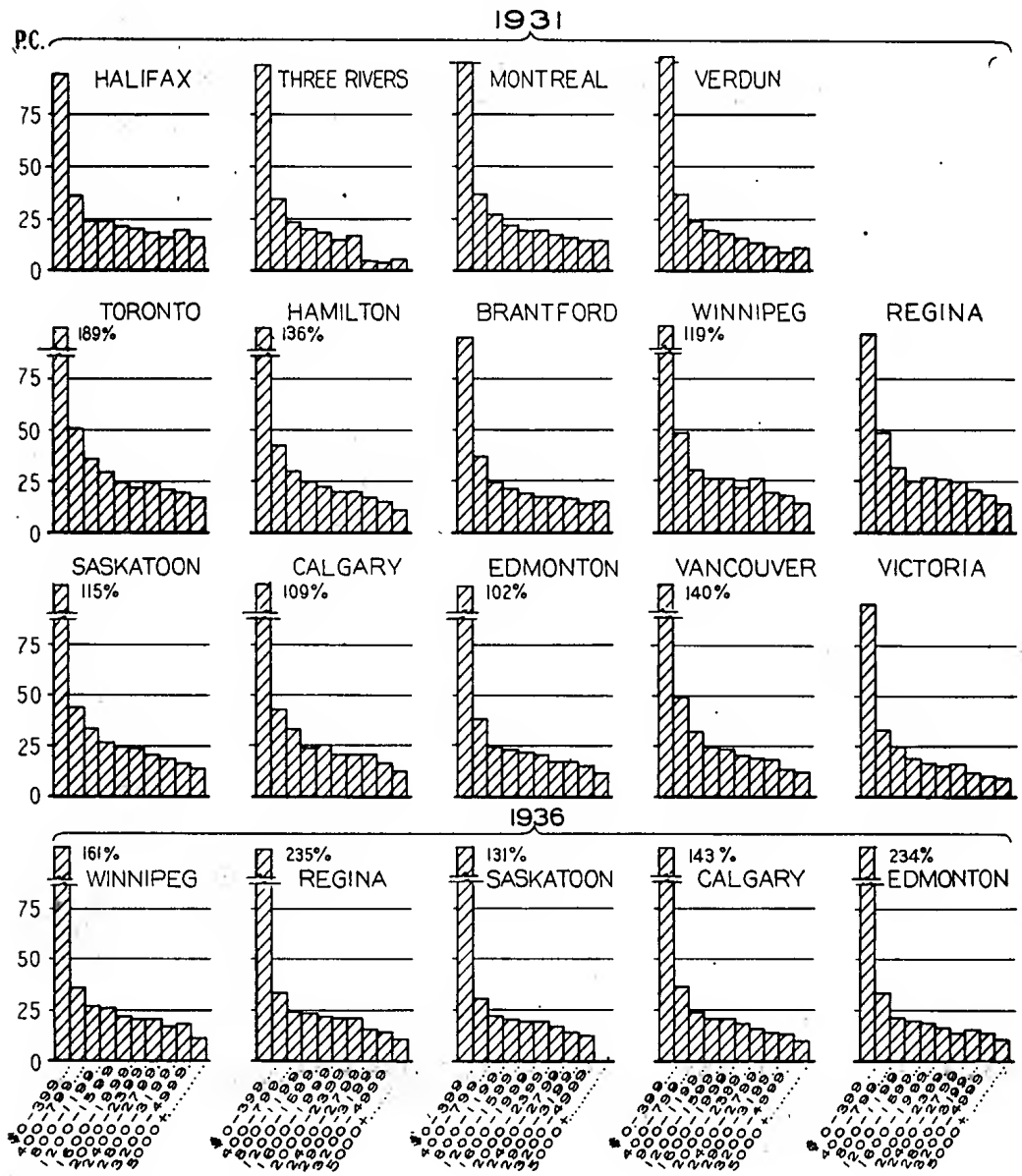


Chart 13

It has been established that the proportion of earnings spent in the form of rent declines as earnings increase. However, when these ratios were rearranged according to rental instead of earnings intervals, evidence of trend disappeared from resultant averages. Ratios for Regina and Victoria, as well as for other cities not hereafter examined, showed no discernible trend in rent-earnings ratios at progressive rent levels. In Victoria, a measure of central tendency was apparent in all rent groups with rents between 11 p.c. and 25 p.c. of earnings. Corresponding signs of concentration in Regina could be observed only in rent groups above $30 per month.

The apparently conflicting evidence of the two types of frequency distribution really presents two aspects of a complex situation. The principal facts which they reveal may be summed up as follows:—

(1) There is a definite tendency for tenant families to spend a smaller percentage of earnings on rent at progressively higher earnings levels. The absolute amount of rent increases but not so fast as outlays in other sections of the family budget. One important exception to this statement has already been noted and should be reiterated. Apparently, just above the level of subsistence there is a tendency for tenant families to increase the proportion of earnings spent for shelter for a brief interval before turning to other needs of an optional character. The additional proportion of earnings devoted to rent at this transitional stage was not large, seldom exceeding 5 p.c., and sometimes much less. In every city, however, there was evidence of this greater stress upon homes at some level in the middle earnings groups.

(2) If, instead of classifying individual percentages of rents to earnings at progressive earnings levels a cross classification of actual earnings and rentals is made, resultant rent-earnings ratios would show a definite trend upward as rents move higher in converse relationship to the decline in ratios as earnings move higher. This difference from the behaviour of averages of individual family ratios is due to greater dispersion in family earnings at successively higher rental levels.

The lack of trend in averages of individual rent-earnings ratios as between different rent groups does not contradict evidence of the tendencies just noted. This arrangement of ratios does draw attention, however, to the wide variations in the importance of the home in the lives of different families. This point may be illustrated by reference to families in Regina with rentals of from $25 to $29 per month. Of 64 such families sampled, 13 had earnings of less than $800, with the remainder showing earnings scattered all the way up to $3,600 per annum. No more than 8 of these fell in any single $100 earnings interval and there were as many with more than $1,400 as there were with less. Disregarding those under $800, the percentage of earnings spent in rent ranged all the way from 9 p.c. up to 40 p.c. with no sign of central tendency in between. Obviously it meant more to families with $800 a year to spend $25 a month for rent than it did to the family with $3,600.

(3) Frequency distributions indicate a greater consistency of rent-earnings ratios in earnings groups above $2,000 per annum than below this figure.

(4) The different patterns of frequency distribution for Regina and Victoria give evidence of relatively greater heterogeneity in housing standards of the former city. This approach to the problem of housing conditions reveals clear-cut differences which are almost entirely hidden by averages of the same data.

Rooms per Person and Rent per Room at Progressive Earnings Levels.—Emphasis has been placed in preceding sections upon the fact that the proportion of earnings devoted to rent tended to decrease at progressively higher earnings levels. It should not be inferred from this that less emphasis was placed upon housing comfort as earnings increased. Higher averages of rooms per person and more rent per room both indicated a marked improvement in shelter standards as earnings rose. There was a clearly discernible variation in the behaviour of rates of increase for these two averages at different earnings levels. Averages of rooms per person advanced more rapidly where earnings were between $800 and $1,600 than either below or above that range. Eight of the 14 cities revealed this tendency quite clearly.

In some of the Western cities the highest rate of increase did not appear until after the $1,600 mark had been passed, but it was followed by definite rate declines in the earnings groups above $2,000. This sensitiveness to housing adequacy in the middle earnings groups is not in contradiction to Engel's law, but suggests that its usual form may be incomplete. To say that the proportion of income spent upon shelter decreases as income rises, gives no indication of changing degrees of emphasis upon housing which may occur while rent-earnings ratios continue to fall.

Increases in averages of rent per room showed less uniformity of behaviour than averages of rooms per person. There was a tendency in data from many cities for the rate of increase in such averages to continue upward considerably beyond $1,600. This was not at all incompatible with the behaviour of rooms-per-person averages. It would be natural for families to concentrate upon adequate space as soon as earnings permitted. Likewise it might be expected that qualitative improvement in housing status, reflected in higher rent per room, might continue far beyond the point where sufficient space had been provided. There were several cities for which the rate of increase for both rooms per person and rent per room was highest within the $800-$1,600 earnings interval, but this was the exception rather than the rule. This may be observed from accompanying statements, which show the percentage rise or fall in rooms per person and rent per room averages at progressive earnings levels.

AVERAGE NUMBER OF ROOMS PER PERSON FOR TENANT HOUSEHOLDS AT PROGRESSIVE EARNINGS LEVELS IN SPECIFIED CITIES, 1931 AND 1936

City	$0-399	$400-799	$800-$1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799
1931							
Halifax	0·78	0·88	0·92	0·96	1·05	1·25	1·16
Three Rivers	0·83	0·85	0·99	1·03	0·95	0·99	1·28
Montreal	0·92	1·10	1·11	1·21	1·26	1·28	1·37
Verdun	1·03	1·03	1·00	1·16	1·16	1·06	1·11
Toronto	1·05	1·13	1·21	1·31	1·29	1·34	1·57
Hamilton	1·06	1·17	1·24	1·36	1·45	1·29	1·42
Brantford	1·18	1·08	1·45	1·43	1·46	1·47	1·80
Winnipeg	0·83	0·89	0·95	1·10	1·17	1·11	1·18
Regina	0·67	0·81	0·90	1·04	1·23	1·25	1·32
Saskatoon	0·84	0·84	0·96	1·10	1·15	1·16	1·26
Calgary	0·78	0·84	0·97	1·10	1·21	1·19	1·19
Edmonton	0·79	0·84	1·00	1·21	1·20	1·20	1·17
Vancouver	0·98	0·97	1·10	1·14	1·28	1·27	1·41
Victoria	1·14	1·24	1·26	1·26	1·38	1·36	1·55
1936							
Winnipeg	0·89	1·05	1·08	1·10	1·23	1·06	1·25
Regina	0·83	1·07	0·96	1·20	1·32	1·36	1·27
Saskatoon	0·97	1·05	1·15	1·28	1·27	1·42	1·40
Calgary	0·80	1·03	1·12	1·31	1·38	1·48	1·41
Edmonton	0·76	0·99	1·07	1·28	1·35	1·37	1·20

PERCENTAGE[1] INCREASE OR DECREASE[2] IN AVERAGE NUMBER OF ROOMS PER PERSON AT PROGRESSIVE EARNINGS LEVELS, FOR HOUSEHOLDS IN SPECIFIED CITIES, 1931 AND 1936

City	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799
1931	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Halifax	13	5	4	9	19	− 7
Three Rivers	2	17	4	− 8	4	29
Montreal	20	7	9	4	2	7
Verdun	−	− 3	16	−	− 9	5
Toronto	8	7	8	− 1	4	17
Hamilton	10	6	10	7	−11	10
Brantford	− 8	34	− 1	2	1	22
Winnipeg	7	7	16	6	− 5	6
Regina	21	11	16	18	2	6
Saskatoon	−	14	15	5	1	9
Calgary	8	16	13	10	− 2	−
Edmonton	6	19	21	− 1	−	− 2
Vancouver	− 1	13	4	12	− 1	11
Victoria	9	2	−	10	− 1	14
1936						
Winnipeg	18	3	2	12	−14	18
Regina	29	−10	25	10	3	− 7
Saskatoon	8	10	11	− 1	12	− 1
Calgary	29	9	17	5	7	− 5
Edmonton	30	8	20	6	2	−12

[1] Percentage for each earnings group based on the average for the group preceding.
[2] Minus sign denotes decrease.

AVERAGE MONTHLY RENT PER ROOM FOR TENANT HOUSEHOLDS AT PROGRESSIVE EARNINGS LEVELS IN SPECIFIED CITIES, 1931 AND 1936

City	$0-399	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799
	$	$	$	$	$	$	$
1931							
Halifax	4.59	4.54	4.85	5.45	6.11	6.07	5.97
Three Rivers	3.61	3.26	3.65	4.14	4.33	4.32	5.58
Montreal	3.98	4.08	4.42	4.82	4.68	5.92	6.03
Verdun	4.68	4.52	4.67	5.02	5.28	5.27	5.30
Toronto	6.29	5.51	6.58	6.60	6.79	7.33	8.13
Hamilton	4.17	4.42	4.61	5.21	6.05	6.29	6.61
Brantford	3.10	3.95	3.59	3.93	4.17	4.50	5.64
Winnipeg	5.06	5.91	6.53	7.10	8.55	6.77	7.80
Regina	5.78	6.44	6.79	7.24	9.61	8.98	10.16
Saskatoon	5.36	5.61	6.49	6.98	8.31	8.30	8.19
Calgary	7.23	6.33	6.66	7.00	7.10	7.57	8.57
Edmonton	4.43	5.01	4.98	5.74	6.32	6.94	6.71
Vancouver	6.19	5.90	5.84	6.11	7.59	7.13	7.81
Victoria	3.56	3.65	3.97	4.53	4.87	4.54	5.57
1936							
Winnipeg	4.27	4.94	5.91	6.32	6.30	5.75	6.53
Regina	3.36	4.60	5.06	5.75	6.80	6.64	8.27
Saskatoon	2.65	3.39	3.93	4.72	5.12	6.12	6.04
Calgary	4.64	5.10	4.50	5.10	5.53	5.69	6.11
Edmonton	3.85	4.38	4.25	4.70	5.13	4.99	4.91

PERCENTAGE[1] INCREASE OR DECREASE[2] IN AVERAGE RENT PER ROOM AT PROGRESSIVE EARNINGS LEVELS, FOR HOUSEHOLDS IN SPECIFIED CITIES, 1931 AND 1936

City	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1931						
Halifax	− 1	7	12	12	− 1	− 2
Three Rivers	−10	12	13	− 5	-	29
Montreal	3	8	9	− 3	27	2
Verdun	− 3	3	8	5	-	1
Toronto	−12	19	-	3	8	11
Hamilton	6	4	13	16	4	5
Brantford	27	− 9	10	6	8	25
Winnipeg	17	11	9	20	−21	15
Regina	11	5	7	33	− 7	13
Saskatoon	5	16	8	19	-	− 1
Calgary	−12	5	5	1	7	13
Edmonton	13	− 1	15	10	10	− 3
Vancouver	− 5	− 1	5	24	− 6	10
Victoria	3	9	14	8	− 7	23
1936						
Winnipeg	16	20	7	-	− 9	14
Regina	37	10	14	18	− 2	25
Saskatoon	28	16	20	9	20	− 1
Calgary	10	−12	13	8	3	7
Edmonton	14	− 3	11	9	− 3	− 2

[1] Percentage for each earnings group based upon the average for the group preceding.
[2] Minus sign denotes decrease.

The irregular nature of rates of increase in rent per room averages was no doubt associated with the way rents are quoted. They increase in intervals of $2.50 per month, or multiples of that amount, but seldom by intervening amounts. Marked variations in rates of increase from city to city furnished additional evidence of different degrees of homogeneity in housing accommodation.

Earnings in Relation to the Value of Owned Homes.—City annual average family earnings expressed as a percentage of corresponding average values of owned homes showed a wide range of variation in the 14 centres included in this analysis. These percentages were scattered between a low of 34·3 p.c. for Montreal and 61·7 p.c. for Edmonton. In each city, percentages showed pronounced increases at progressive earnings groups. As noted earlier,

EARNINGS AS A PERCENTAGE OF THE VALUE OF OWNED HOMES AND RELATED DATA FOR HOUSEHOLDS IN SPECIFIED CITIES, 1931 AND 1936.

City	$0-399	$400-799	$800-1,199	$1,200-1,599	$1,600-1,999	$2,000-2,399	$2,400-2,799	$2,800-3,199	$3,200-4,999	$5,000 and over	Total	Rent-Earnings Ratio	P.C. of Homes Owned
1931	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Halifax	5	24	37	41	42	52	55	59	60	74	49	23	35
Three Rivers	4	16	28	30	34	38	43	56	57	60	36	19	28
Montreal	4	11	22	27	33	34	38	41	49	53	34	21	15
Verdun	3	11	23	28	36	38	56	65	73	86	39	19	12
Toronto	4	13	23	31	36	41	43	46	51	54	38	26	46
Hamilton	6	21	31	39	44	49	59	49	71	73	44	26	48
Brantford	8	21	36	46	52	64	65	49	61	102	47	23	54
Winnipeg	6	26	37	39	49	53	59	61	62	65	50	25	47
Regina	8	24	31	40	44	44	51	47	61	69	46	27	50
Saskatoon	11	25	39	45	47	45	48	54	64	76	48	26	54
Calgary	10	28	39	41	51	56	54	66	63	75	51	25	52
Edmonton	9	36	56	57	58	65	67	76	83	97	62	22	53
Vancouver	8	26	44	53	64	58	75	66	64	74	54	25	51
Victoria	8	25	45	50	55	62	75	74	77	86	57	20	47
Range for 14 cities	3-11	11-36	22-56	27-57	33-64	34-65	38-75	41-76	49-83	53-102	34-62	19-27	12-54
1936													
Winnipeg	7	28	42	49	53	67	69	72	71	65	53	28	-
Regina	3	28	34	43	44	48	47	52	62	69	43	26	-
Saskatoon	7	30	54	53	53	54	52	59	62	54	49	21	-
Calgary	5	33	55	58	58	61	67	91	73	90	57	24	-
Edmonton	8	50	56	61	64	64	73	72	75	95	59	26	-

there was a considerable number of family heads listed as owners in the earnings group below $400. Percentages at this earnings level, ranging from 2·8 to 10·9, were definitely abnormal. Many owners in the group between $400 and $799 doubtless were in abnormal economic circumstances also. Earnings expressed as a percentage of home values in this group ranged from 11·0 to 36·4 p.c. They continued to rise unevenly but rapidly as earnings advanced, with percentages for the residual group with earnings of $5,000 or more per year falling between limits of 53·0 and 102·2.

The wide variation in city average percentages bore a significant relationship to proportions of owned homes and ratios of rent to earnings in the tenant group. Speaking generally, the proportion of owned homes varied directly with the size of earnings-value percentages and

FAMILY EARNINGS AS A PERCENTAGE OF THE VALUE OF OWNED HOMES AT PROGRESSIVE EARNINGS LEVELS, 1931

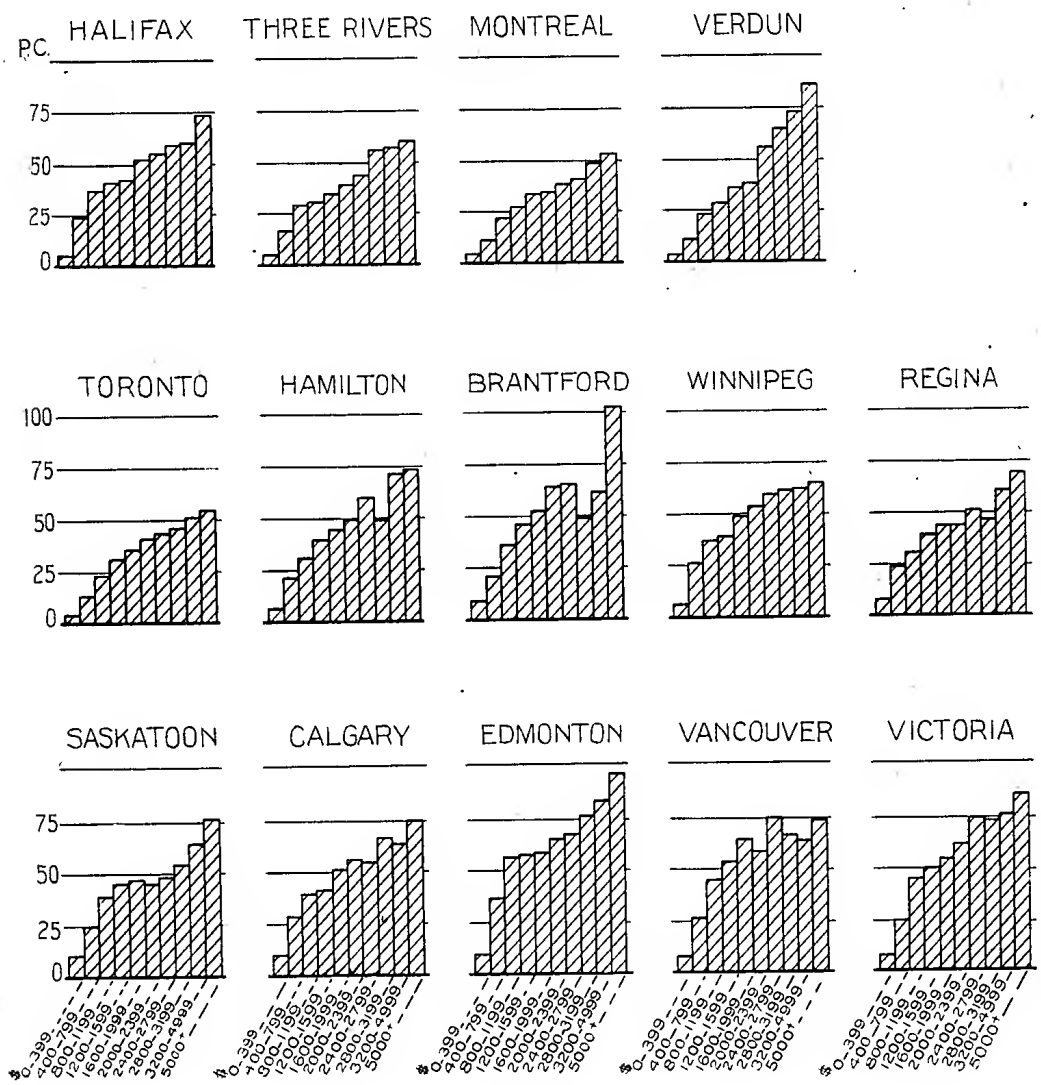


Chart 14

also with rent-earnings percentages. In other words, where earnings were high relative to home values the proportion of owned homes was high and where rents were low in relation to earnings the proportion of owned homes was low. The size of cities also appeared to be related to ownership in some cases and in others there was evidence of what might be termed ownership preference which could not be explained from the data available.

An indication of the ownership preference noted above may be obtained by comparing percentages of owned homes to all homes with percentages of earnings expressed as a percentage of home values. However, lack of data relating to changes in value since the date of purchase prevent any exact significance from being given to these comparisons. These two percentages were nearly always within 10 points of each other for any single city. Where ownership percentages exceeded percentages of earnings as a proportion of home values by a substantial amount, it may reasonably be inferred that ownership was more highly esteemed than in places where the reverse was the case. This was true generally of Ontario cities and also for Regina, Saskatoon and Calgary. Elsewhere ownership percentages were lower than annual earnings expressed as a percentage of corresponding home value averages. The margin in this direction was particularly marked in the Province of Quebec and to a lesser extent in Halifax. However, rents in relation to family earnings in Quebec were lower than in any other province. The influence of size showed clearly in figures for Montreal and Three Rivers, the latter having proportionately more than twice as many owned homes, although rent-earnings ratios were approximately the same in both cities.

CHAPTER VII

TENURE

The significance of facts relating to tenure is becoming more obscure due to changing social emphasis placed upon ownership. It is no longer a foregone conclusion that persons of means own their own homes and, although the many advantages of ownership still remain, they have been gradually undermined in urban areas by the convenience and attractiveness of modern multiple-unit dwellings. Between 1921 and 1931 the proportion of Canadian rural home owners to all householders declined 5 p.c. and that of urban owners 3 p.c. The shift towards tenancy in rural Canada is cause for more concern than the urban movement, since it is an indication that the ownership of farms has grown less profitable during this period. Nevertheless, the 1931 Census showed that the occupants of the great majority of Canadian farms still owned them, although frequently burdened with mortgages or other debt encumbrances.

Proportions of Owners and Tenants.—In 1931, of the 2,252,729 ordinary households* enumerated by the census, 1,362,896 or 60·5 p.c. were owners and 889,833 or 39·5 p.c. were tenants. Of the owners 797,812 were rural and 565,084 were urban dwellers. There were 675,631 tenants in urban areas and 214,202 in rural. The continued predominance of ownership among the farm population is clearly apparent from these figures, which show 78·8 p.c. of all rural households in owned homes, in contrast with only 45·6 p.c. of urban households. Regional differences were rather striking. In the case of rural areas, the proportions living in owned homes in the Maritimes and Quebec were higher than the average for Canada, varying from 82 p.c. to 93 p.c. Ontario and Manitoba were a little lower at 75 p.c., Saskatchewan and Alberta higher again around 80 p.c. and British Columbia the lowest of all the provinces at approximately 66 p.c. Rather the reverse was true of urban areas. Prince Edward Island and Nova Scotia showed higher proportions than the average; New Brunswick and especially Quebec were lower, and Ontario and the Western Provinces higher, varying from 51 p.c. to 55 p.c. Quebec with a high proportion of rural owners had the lowest proportion of urban owners. British Columbia, on the other hand, with an average percentage of urban owners came lowest on the list of rural owners, while Prince Edward Island had the largest proportion of owned homes in both rural and urban areas.

The percentages of owners in rural and urban provincial areas are shown below in order of magnitude. This statement is an extract from Table 12, Part II.

* Comprise 99·4 p.c. of the total number, excluding only those households in hotels, boarding houses, institutions, etc

PERCENTAGE OF HOUSEHOLDS LIVING IN OWNED HOMES, CANADA AND PROVINCES, 1931

Province	Rural Areas	Urban Areas
	p.c.	p.c.
CANADA	78·8	45·6
Prince Edward Island	93·1	56·3
Nova Scotia	85·8	48·1
New Brunswick	82·2	39·0
Quebec	84·5	29·7
Ontario	75·6	52·6
Manitoba	75·7	50·6
Saskatchewan	80·6	54·7
Alberta	80·8	53·2
British Columbia	66·4	52·1

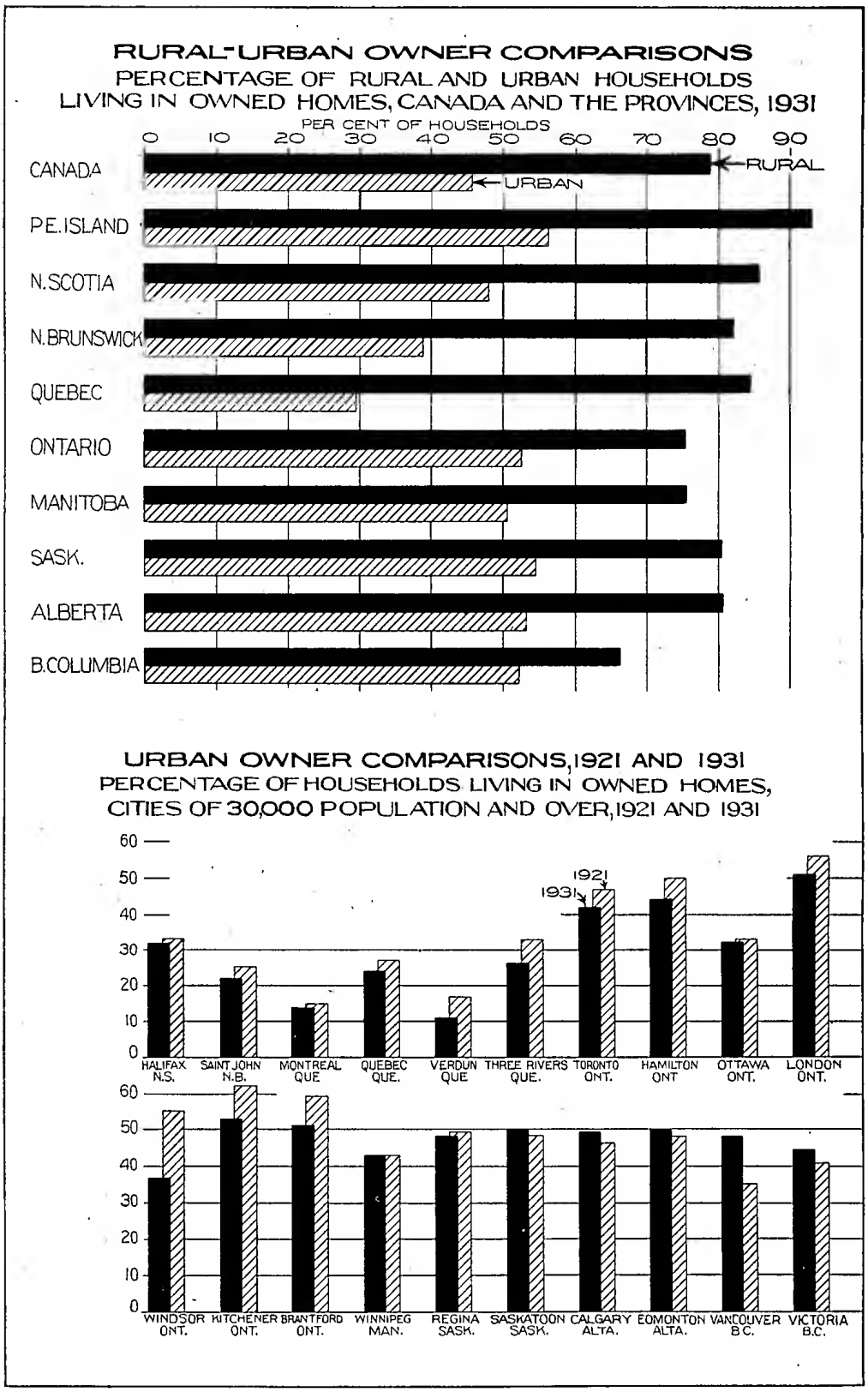

RURAL-URBAN OWNER COMPARISONS
PERCENTAGE OF RURAL AND URBAN HOUSEHOLDS
LIVING IN OWNED HOMES, CANADA AND THE PROVINCES, 1931
PER CENT OF HOUSEHOLDS
0 10 20 30 40 50 60 70 80 90
CANADA
RURAL
URBAN
P.E.ISLAND
N.SCOTIA
N.BRUNSWICK
QUEBEC
ONTARIO
MANITOBA
SASK.
ALBERTA
B.COLUMBIA
URBAN OWNER COMPARISONS, 1921 AND 1931
PERCENTAGE OF HOUSEHOLDS LIVING IN OWNED HOMES,
CITIES OF 30,000 POPULATION AND OVER, 1921 AND 1931
60
50
40
30
20
10
0
1921
1931
HALIFAX N.S.
SAINT JOHN N.B.
MONTREAL QUE
QUEBEC QUE.
VERDUN QUE
THREE RIVERS QUE.
TORONTO ONT.
HAMILTON ONT
OTTAWA ONT.
LONDON ONT.
WINDSOR ONT.
KITCHENER ONT.
BRANTFORD ONT.
WINNIPEG MAN.
REGINA SASK.
SASKATOON SASK.
CALGARY ALTA.
EDMONTON ALTA.
VANCOUVER B.C.
VICTORIA B.C.

Chart 15

Changes in Owner-Tenant Ratios, 1921-1931.—As already noted, the proportion of owners to tenants between 1921 and 1931 declined moderately in both rural and urban areas and relative changes in different parts of the country were sufficiently diverse to warrant a regional examination. Since 1921 data of this type were tabulated for private families only, a comparison of 1921 and 1931 records must be based upon private families rather than households which are used elsewhere in this monograph as the basis of analysis.

The proportion of tenants increased in all provinces but relative stability was maintained in the Maritimes and British Columbia. The largest shift to tenancy occurred in the Prairie Provinces, led by Manitoba, with Ontario and Quebec showing slightly less change. Since the greatest decline in ownership was only 7 p.c., it seems improbable that a serious adjustment in tenure is in progress. Curiously enough, the rural shift to tenancy in the Western Provinces has been paralleled by an increase in the proportion of owners in most of the larger cities of this same area. In all cities of over 30,000 west of Winnipeg, there were larger increases in the number of owners than in tenants between 1921 and 1931, although only Alberta and British Columbia recorded a stronger position for owners in all urban areas. The largest gains in tenant proportions for urban centres occurred in Prince Edward Island, New Brunswick, Quebec and Ontario, with increases of 5 p.c., 5 p.c., 4 p.c. and 5 p.c., respectively. Changes in other provinces were of inconsequential amounts. They may be observed from the following statement.

HOME OWNERS AS A PERCENTAGE OF THE TOTAL NUMBER OF FAMILIES, CANADA AND PROVINCES, 1921 AND 1931

Province	Rural Areas		P.C. Change	Urban Areas		P.C. Change
	1931	1921		1931	1921	
	p.c.	p.c.		p.c.	p.c.	
CANADA	74	79	−5	43	46	−3
Prince Edward Island	86	87	−1	51	56	−5
Nova Scotia	79	81	−2	44	46	−2
New Brunswick	74	78	−4	36	41	−5
Quebec	77	81	−4	28	32	−4
Ontario	71	76	−5	49	54	−5
Manitoba	72	79	−7	47	48	−1
Saskatchewan	77	83	−6	53	56	−3
Alberta	77	82	−5	51	50	+1
British Columbia	64	65	−1	49	42	+7

For cities of over 30,000, differences were more pronounced. In 14 instances decreases occurred, ranging from 1 p.c. to 18 p.c., with the average decrease approximating 5 p.c. Increases occurred in Saskatoon, Calgary, Edmonton, Vancouver and Victoria, but of these Vancouver was the only city showing noteworthy improvement.

There was no definite relationship between population growth and changing tenure, although it will be shown subsequently that a relationship exists between tenure and population density. Vancouver, with the greatest gain in ownership, registered the largest percentage increase in population between 1921 and 1931 in cities of over 30,000. Verdun with an increase of 164 p.c. in the number of families showed a decline of 6 p.c. in the proportion of owners but this decrease was exceeded in several cities in which much less rapid growth had occurred. It is apparent from the cases cited that local conditions may be a more powerful influence upon tenure than the pressure of population. Further, it seems clear that tenure reacts to a wide variety of related factors. Income, although a vital consideration, presumably is not so closely related to ownership as to adequacy of accommodation, for available evidence points to a general increase in purchasing power throughout Canada during the decade between 1921 and 1931. In addition, taxation, building costs and shifts in occupational grouping, as well as unique climatic attributes, are undoubtedly among the influences playing a part in the determination of owner-tenant ratios. For example, the climate of Victoria, B.C., has been largely responsible for its growing popularity among families with retired heads, who buy homes in that city in which to pass the closing years of life. Again, rapid industrialization with many manufacturing concerns showing wide seasonal variations in activity seems clearly related to the increase of tenancy in Windsor, Ont. A systematic study of such relationships should yield information of great value to municipal authorities.

HOME OWNERS AS A PERCENTAGE OF TOTAL PRIVATE FAMILIES, CITIES OF 30,000 POPULATION AND OVER, 1921 AND 1931

City	Home Owners as P.C. of Total Private Families			P.C. Increase in Number of Families 1921-31
	1931	1921	Increase or Decrease[2] 1921-31	
Halifax	32	33	−1	4
Saint John	22	25	−3	2
Montreal	14	15	−1	35
Quebec	24	27	−3	32
Verdun	11	17	−6	164
Three Rivers	26	33	−7	55
Toronto	42	47	−5	26
Hamilton	44	50	−6	39
Ottawa	32	33	−1	20
London	51	56	−5	21
Windsor	37	55	−18	69
Kitchener	53	62	− 9	52
Brantford	51	59	− 8	4
Winnipeg	43	43	-	25
Regina	48	49	− 1	65
Saskatoon	50	48	2	63
Calgary	49	46	3	36
Edmonton	50	48	2	37
Vancouver	48	35	13	[1]
Victoria	44	41	3	7

[1] 1921 and 1931 figures not comparable.
[2] Minus sign denotes decrease.

Before turning to an examination of factors related to tenure, the relationship between density of population and ownership should be noted. Despite exceptions due to particular conditions, it is clear from the percentages which follow that ownership is affected adversely by the growing concentration of population.

PERCENTAGE OF OWNERS IN SPECIFIED AREAS

Rural	78·8
Urban under 1,000	63·8
Urban 1,000-29,999	53·9
Urban 30,000 and over	37·2

Characteristics of Households Related to Tenure.—This section is devoted to a study of the relative proportions of ownership and tenancy associated with a number of significant features of households. Type, size, composition and characteristics of family heads have been singled out for examination.

Type of Household.—Households in the 1931 census were grouped in three classes, one-person, one-private-family and multiple-family households. The one-family group was of course by far the largest, comprising between 82 p.c. and 89 p.c. of totals for the different provinces. Next in importance came the one-person household ranging from 4 p.c. to 14 p.c. of provincial totals, while multiple-family households accounted for between 4 p.c. and 9 p.c. The proportions of these three groups living in owned homes were as follows:—

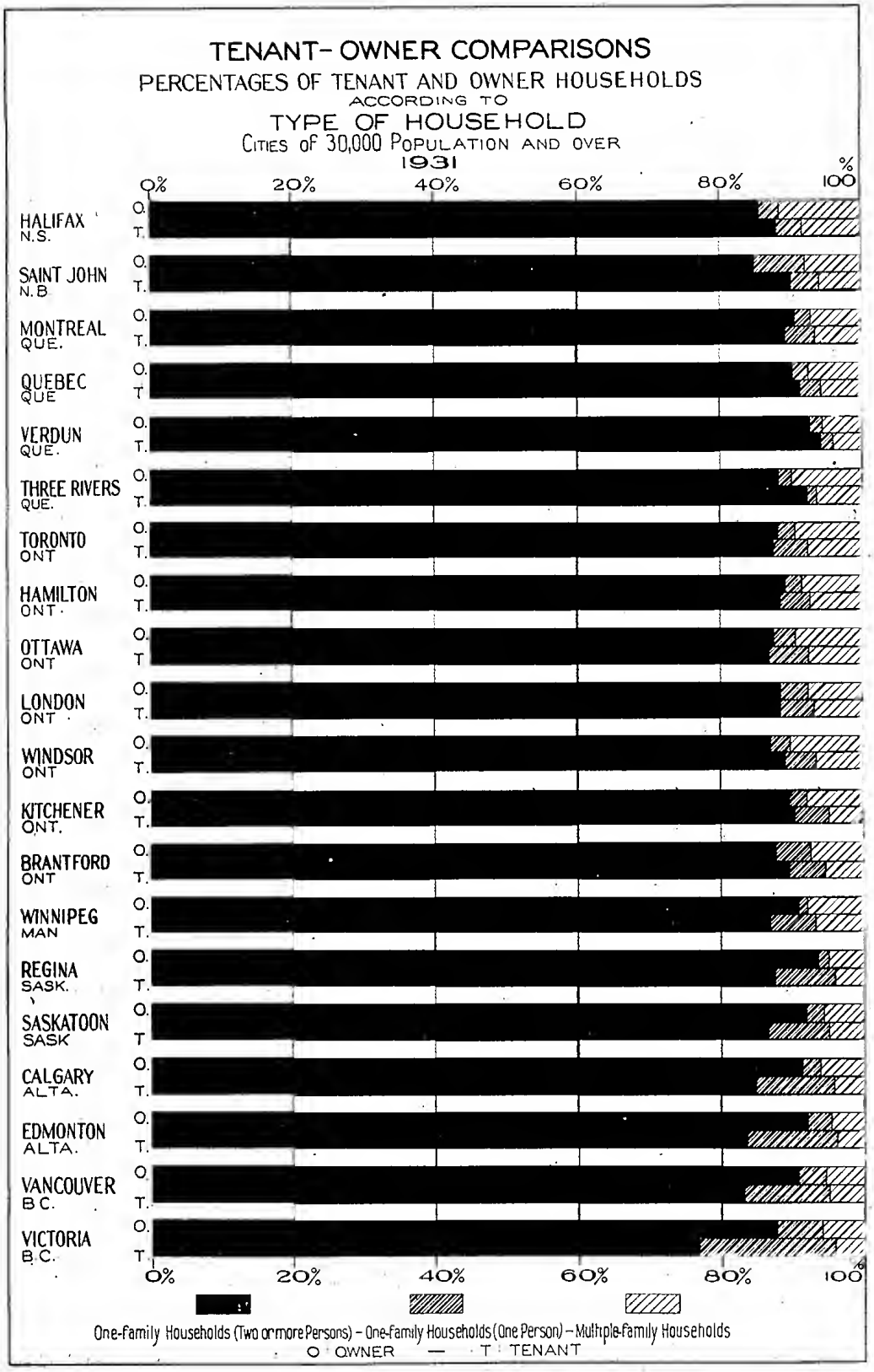

TENANT- OWNER COMPARISONS
PERCENTAGES OF TENANT AND OWNER HOUSEHOLDS
ACCORDING TO
TYPE OF HOUSEHOLD
CITIES OF 30,000 POPULATION AND OVER
1931
0%
20%
40%
60%
80%
100
%
HALIFAX N.S.
SAINT JOHN N.B
MONTREAL QUE.
QUEBEC QUE
VERDUN QUE.
THREE RIVERS QUE.
TORONTO ONT
HAMILTON ONT.
OTTAWA ONT
LONDON ONT.
WINDSOR ONT
KITCHENER ONT.
BRANTFORD ONT
WINNIPEG MAN
REGINA SASK.
SASKATOON SASK
CALGARY ALTA.
EDMONTON ALTA.
VANCOUVER B.C.
VICTORIA B.C.
O.
T.
One-family Households (Two or more Persons) – One-family Households (One Person) – Multiple-family Households
O OWNER — T TENANT

Chart 16

PERCENTAGE OF OWNERS IN DIFFERENT TYPES OF HOUSEHOLDS, CANADA AND PROVINCES, 1931

Province	One-Family Households of		Multiple-Family Households
	One Person	Two or More Persons	
	p.c.	p.c.	p.c.
CANADA	61	60	68
Prince Edward Island	87	84	90
Nova Scotia	77	68	78
New Brunswick	74	66	80
Quebec	47	47	60
Ontario	64	61	67
Manitoba	57	64	68
Saskatchewan	67	72	80
Alberta	68	70	77
British Columbia	51	59	63

The surprising feature of this statement is the high proportion of multiple-family households living in owned homes. This reflects rural conditions primarily and is not characteristic of urban areas as may be observed from Chart 16 showing proportions of different household types in the two tenure groups for cities of 30,000 population and over. In cities of over 30,000 there were only 19,540 multiple-family households in owned homes in 1931, as compared with 26,775 tenant households. There was, however, a Dominion total of 96,817 multiple-family households living in owned homes as against 45,598 tenant households of similar composition. The greater prevalence of filial relationships between families in rural multiple-family households and the natural expectation of inheritance on the part of junior family heads produces a greater incentive to ownership than is to be found in urban households thrown together by force of circumstances. The high proportion of one-person-family owners presumably is also largely a reflection of rural conditions, since only 6,910 out of 98,076 households in this group lived in cities of over 30,000.

Differences in the proportion of owners in the three types of households represented in the above statement do not appear to be particularly significant. The greatest difference of 14 p.c. for New Brunswick is not large and, since roughly eight-ninths of New Brunswick households were of the one-private-family type, the significance of ownership in the residual ninth is limited. It will be noted that percentages in the three groups rise and fall together from province to province, indicating that ownership is related to conditions which differ with geographical location. (See Part II, Table 14.)

Size and Composition of the Household.—Comments in this section are confined to one-family households of two or more persons. As already noted, approximately 86 p.c. of all households are composed of one family of two or more persons, so that conditions with respect to them may be considered as typical.

The average number of persons per household in owned homes was 4·71 as compared with 4·37 in tenant homes, with children accounting for 2·47 and 2·13 persons per household, respectively. The number of children in tenant households, although slightly less than the corresponding number in owned homes, formed practically the same proportion of the average household, *viz.* 52 p.c. for owners and 49 p.c. for tenants. Rural figures for both owners and tenants were about 5 p.c. higher than corresponding urban figures, indicating that the composition of the household was affected slightly by differences in rural and urban conditions. There seems little reason to believe, however, from the 1931 Census records that the composition of the household itself bore any significant relation to tenure, although as already noted, there was a tendency for tenant households to be smaller than those in owned homes. Prince Edward Island, for example, with relatively large families had the largest proportion of owners, while British Columbia with small families had the second lowest proportion of owners. Tenure in these cases was more closely associated with the relative proportions of rural and urban population than with the size and composition of the household. (See Part II, Table 14.)

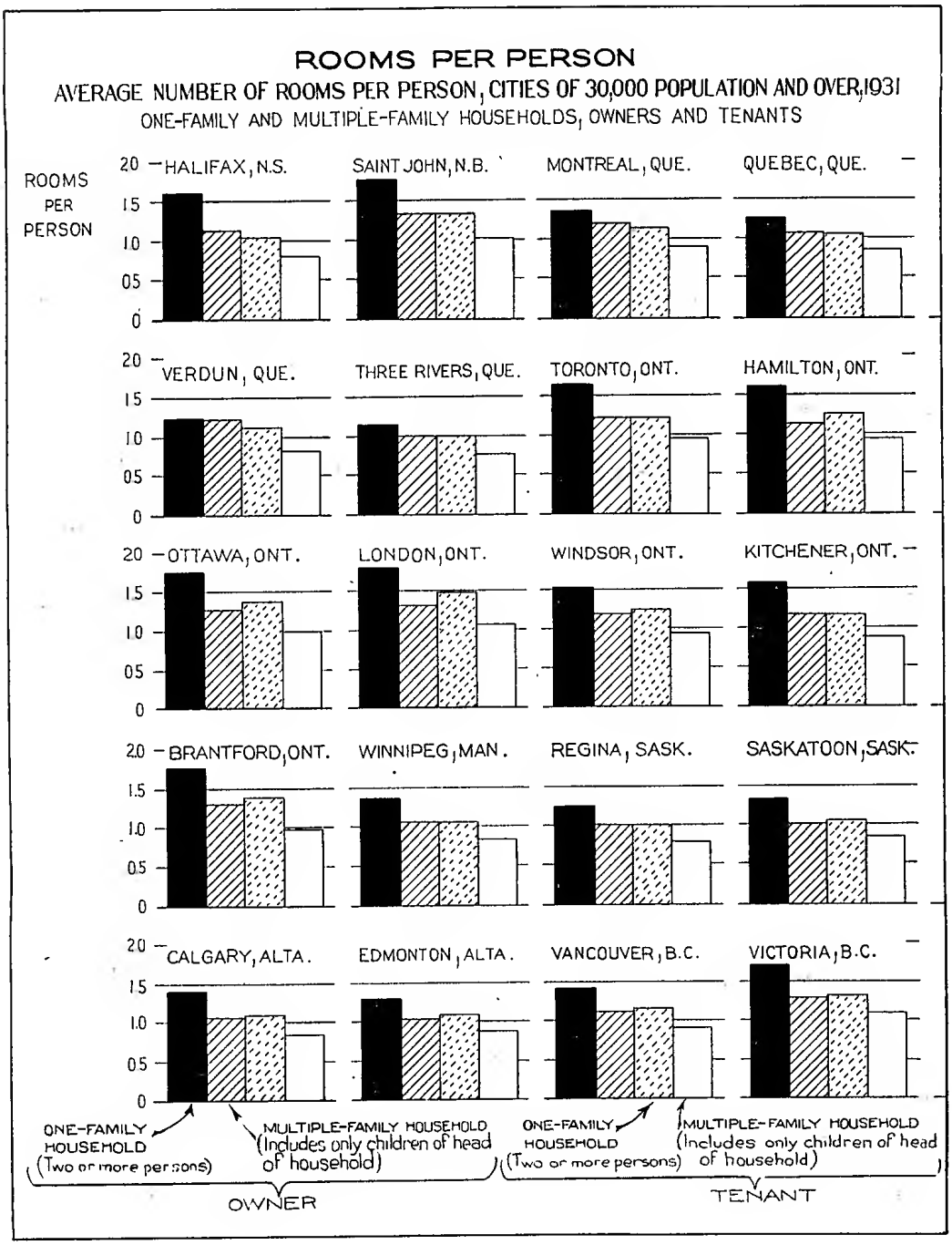


Chart 17

Characteristics of Owner Family Heads.—An examination of facts relating to family heads contributes more to an understanding of tenure than a study of the households as a unit. It has been possible from 1931 Census records to consider the age, class of occupation, conjugal condition and birthplace of family heads in relation to this subject. The private family rather than the census household is the basis of comparisons which follow.

Age.—As might be expected the proportion of owned homes was much higher among family heads of advanced age than among relatively young heads. The purchase of a home involves a

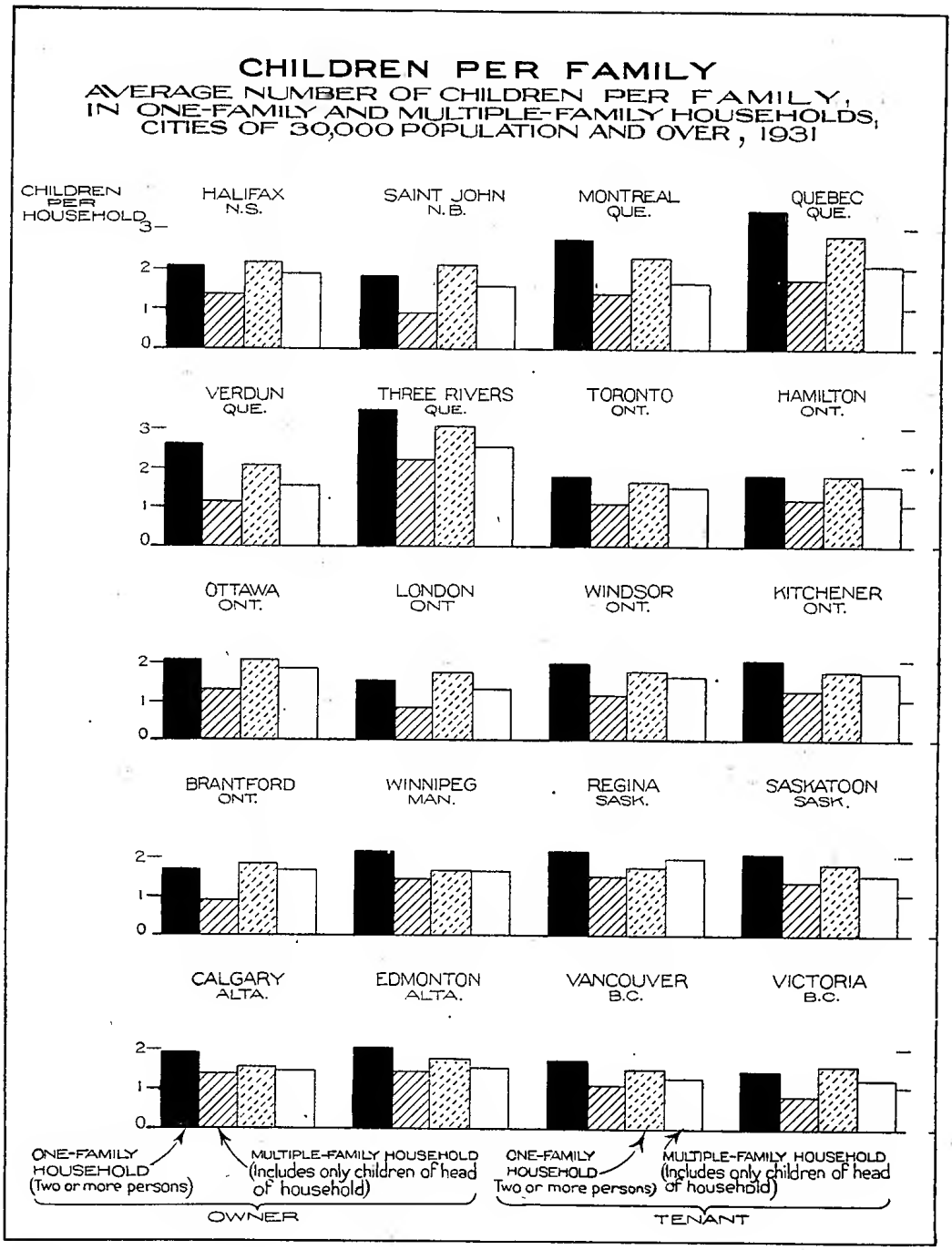


Chart 18

fairly large initial capital outlay and the savings of the average family accumulate slowly. From the statement immediately following, it will be seen that a comparatively small percentage of families owned homes before the family head reached the age of 35. From that age onward, however, ownership became more prevalent, and among family heads 55 or over, 85·7 p.c. lived in owned homes in rural areas and 61·2 p.c. in urban communities. It may be noted also that the proportion of owners under 35 years of age was materially larger for the rural population. Otherwise, differences due to age were similar in both rural and urban areas.

The first half of the statement below shows owners as a percentage of all family heads within each age group. The second half shows the percentage of all rural and all urban owner heads in specified age groups. (See Part II, Table 15.)

DISTRIBUTION OF OWNERS ACCORDING TO AGE GROUPS, CANADA, 1931

Age Group	P.C. Owner Heads at Specified Ages		P.C. Distribution of Owners	
	Rural	Urban	Rural	Urban
All ages	74·0	42·6	100·0	100·0
Under 25	37·5	6·8	1·9	0·5
25-34	54·4	18·8	14·0	8·8
35-44	72·6	38·4	23·7	23·7
45-54	82·1	50·8	25·1	28·2
55 and over	85·7	61·2	35·3	38·8

Occupational Status.—The classification of homes according to occupational status of the head has been done only in broad outline for urban centres. Household heads have been grouped into the following five divisions: wage-earners, those working independently on their own account, those with no recognized occupation, those living on income, and employers. Heads designated as having no occupation were mainly women, presumably widows with sons and daughters earning the major portion of family income. Wage-earners headed 67·2 p.c. of all Canadian urban homes, 10·8 p.c. of heads worked on their own account, 8·1 p.c. had no occupation, 8·0 p.c. lived on their income and 5·9 p.c. were employers. (See Part II, Table 17.)

Only 38·4 p.c. of wage-earners, which constituted the largest group, lived in owned homes. Of heads with no occupation, 49·9 p.c. owned their own homes, and of those working on their own account 56·0 p.c. were owners. The largest proportion of owners was found among employers and heads living upon income, of which 66·4 p.c. and 71·1 p.c., respectively, were owners. This is shown in the statement following which is an extract from Table 16, Part II.

URBAN HOUSEHOLDS CLASSIFIED ACCORDING TO TENURE AND OCCUPATIONAL STATUS OF HEAD, CANADA, 1931

Occupational Status of Head	Tenants	Owners	
		No.	P.C. of Occupational Class
TOTAL	675,631	565,084	45·5
Wage-earner	513,196	320,493	38·4
Own account	58,690	74,750	56·0
No occupation[1]	50,343	50,210	49·9
Income	28,648	70,642	71·1
Employer	24,754	48,989	66·4

[1] Includes those who never had a gainful occupation, *e.g.*, widows and married women whose husbands live elsewhere also those retired from gainful occupations and not living on income.

Conjugal Condition.—Husband and wife lived together as heads of about 80 p.c. of Canadian families in 1931. Where homes had one head they were classed as widowed, single, married with husband or wife absent and divorced. These groups are enumerated here in the order of their numerical importance. The proportion of owners was highest among widowed heads of which there were 115,655 in rural, and 169,970 in urban areas. Single owners were relatively important in rural communities, where 76·5 p.c. of the 100,605 thus classified owned their own homes. This contrasted with 35·7 p.c. of owners among the 68,567 single heads living in urban areas. Families with one head, married or divorced, were relatively unimportant, totalling slightly over 100,000 in all of Canada. As already noted, ownership in these two groups was less prevalent than for the three other types of family heads. Of the 823,666 rural families with two married heads, 73·9 p.c. owned their own homes, while 43·0 p.c. of the 1,033,439 urban families of this

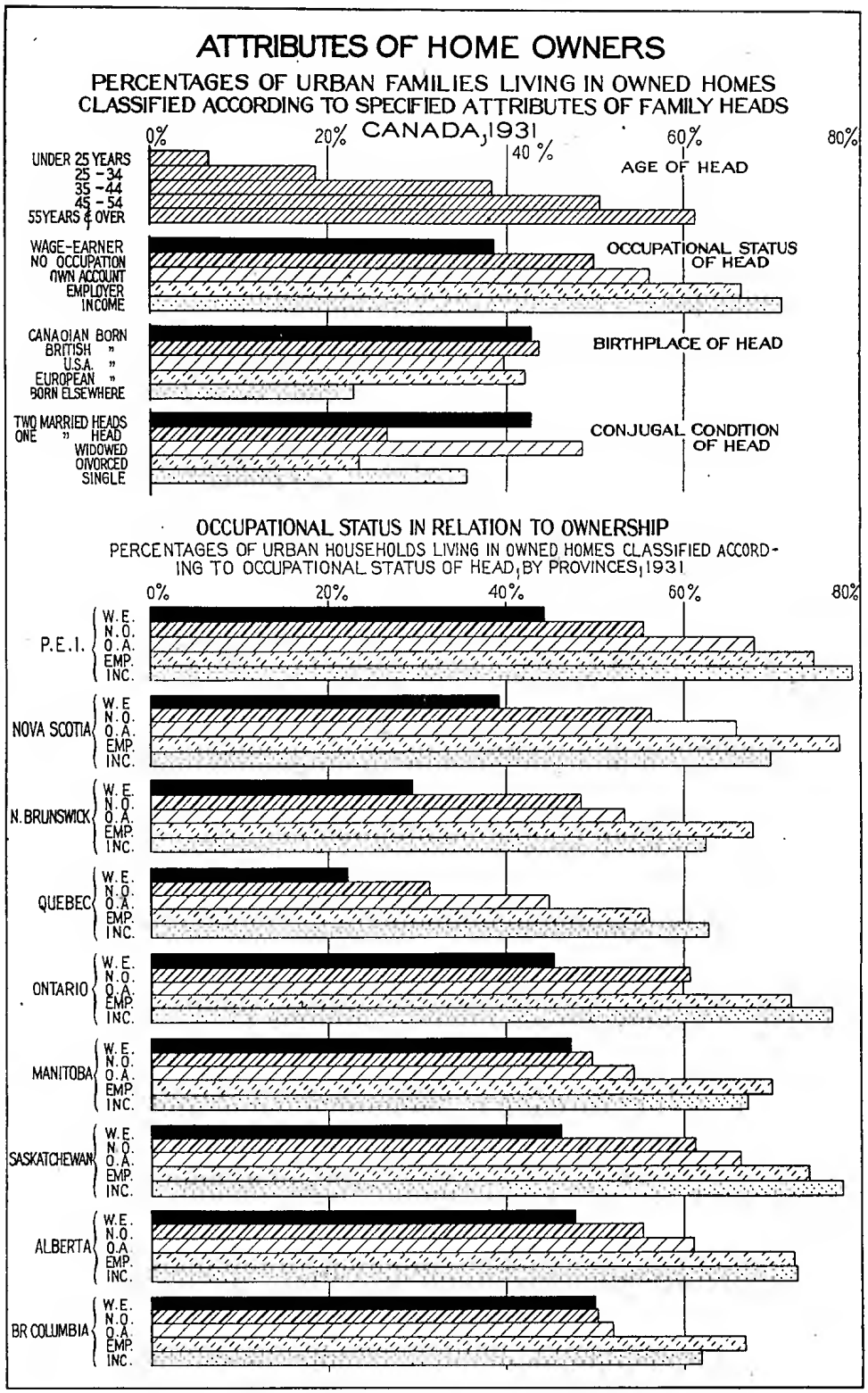

ATTRIBUTES OF HOME OWNERS
PERCENTAGES OF URBAN FAMILIES LIVING IN OWNED HOMES
CLASSIFIED ACCORDING TO SPECIFIED ATTRIBUTES OF FAMILY HEADS
CANADA, 1931
0%
20%
40%
60%
80%
UNDER 25 YEARS
25 - 34
35 - 44
45 - 54
55 YEARS & OVER
AGE OF HEAD
WAGE-EARNER
NO OCCUPATION
OWN ACCOUNT
EMPLOYER
INCOME
OCCUPATIONAL STATUS OF HEAD
CANADIAN BORN
BRITISH "
U.S.A. "
EUROPEAN "
BORN ELSEWHERE
BIRTHPLACE OF HEAD
TWO MARRIED HEADS
ONE " HEAD
WIDOWED
DIVORCED
SINGLE
CONJUGAL CONDITION OF HEAD
OCCUPATIONAL STATUS IN RELATION TO OWNERSHIP
PERCENTAGES OF URBAN HOUSEHOLDS LIVING IN OWNED HOMES CLASSIFIED ACCORDING TO OCCUPATIONAL STATUS OF HEAD, BY PROVINCES, 1931
P.E.I.
NOVA SCOTIA
N. BRUNSWICK
QUEBEC
ONTARIO
MANITOBA
SASKATCHEWAN
ALBERTA
BR COLUMBIA
W.E.
N.O.
O.A.
EMP.
INC.
W.E.- WAGE-EARNER, N.O.-NO OCCUPATION
O.A.- OWN ACCOUNT, EMP.-EMPLOYER, INC.- INCOME

Chart 19

type lived in owned homes. The same difference in proportions of urban and rural owners appears in this comparison as has been noted earlier. As may be noted from the following statement, families with two married heads were so predominant in both rural and urban areas that ownership percentages for this group correspond almost exactly with those for Dominion totals. (See Part II, Table 18.)

RURAL AND URBAN FAMILIES, BY CONJUGAL CONDITION OF HEAD AND TENURE OF HOME, CANADA, 1931

Conjugal Condition of Head	Rural		Urban	
	No. of Families	P.C. Owners	No. of Families	P.C. Owners
TOTAL	1,085,781	74·0	1,333,579	42·6
Married—				
Two heads	823,666	73·9	1,033,439	43·0
One head	44,238	56·1	59,075	26·7
Widowed	115,655	79·0	169,970	48·7
Divorced	1,617	61·8	2,528	23·4
Single	100,605	76·5	68,567	35·7

Birthplace.—A surprising uniformity exists in the proportion of owners in families whose heads have been born outside of Canada. In fact, no significant differences occur between proportions of owner heads in Canada, the British Isles, the United States or Europe. Ownership among residual families was, however, definitely less prevalent. In this group, which included a considerable number of Asiatics, only 22·8 p.c. of urban family heads and 41·0 p.c. of rural family heads owned their homes. Of the other groups mentioned above, percentages living in owned homes ranged between 68·3 and 75·4 for rural areas, and 39·7 and 43·7 for urban. (See Part II, Table 19.)

RURAL AND URBAN FAMILIES, BY BIRTHPLACE OF HEAD AND TENURE OF HOME, CANADA, 1931

Birthplace of Head	Rural		Urban	
	No. of Families	P.C. Owners	No. of Families	P.C. Owners
TOTAL	1,085,781	74·0	1,333,579	42·6
Canada	725,090	75·4	814,341	42·7
British Isles	151,017	68·3	322,894	43·7
United States	62,711	71·4	52,763	39·7
Continental Europe	141,660	75·0	130,978	42·0
Other countries	5,303	41·0	12,603	22·8

The Lodging Population.—It is an arresting fact that almost a million persons were included in the lodging population as classified by the 1931 Census. There were 555,606 individual lodgers distributed in 350,155 households and approximately 427,000 persons in 154,000 lodging families. By far the largest proportion of these lived in private homes, this being true of 496,093 individual lodgers and 151,084 lodging families. The 13,995 households living in boarding houses, hotels, institutions, etc., included approximately 3,000 lodging families, 59,513 single lodgers and a total of 160,484 persons. Of these, 48,953 were living in rooming houses, 42,949 in hotels, 23,419 in various types of institutions and 45,163 in other types of households.*

This second group of 160,484 persons living in public or semi-public dwellings was widely scattered, the only unusual concentration being in British Columbia where 23 p.c. of the total number resided. About one-half of the 36,885 persons in the British Columbia group were individual lodgers, of whom the great majority lived in city rooming houses and hotels. The other half of the British Columbia lodging population was comprised mainly of persons living in

* These residual households were composed mainly of construction and lumber camps. The institutional population included inmates of homes for the aged, orphanages, prisons, etc.

rural camps, etc., institutional inmates numbering only 1,697 persons. In other provinces the lodging population tended to be much more concentrated in cities than was the case for British Columbia. Ontario, for example, had 26,411 of its 46,351 lodging persons in urban areas and the proportion was considerably higher in Quebec. Accommodation per person living in hotels averaged 2·64 rooms, while rooming houses averaged only 0·71 room per person. Space comparisons for institutions were not significant, as institutional wards may give adequate accommodation for as many as eight or ten persons. (See Part II, Tables 20 and 21.)

As already noted, the proportion of the total lodging population housed in hotels and rooming houses was small in comparison with the number living in private homes. These formed a group distinct from tenant householders, although individual lodgers and lodging families were scattered widely throughout tenant and owner households.

Lodging was more prevalent in urban than in rural districts, although 44 p.c. of lodging families lived in rural Canada. There were 72 p.c. of individual lodgers and 56 p.c. of lodging families living in cities in 1931, with the heaviest concentration occurring in cities of over 30,000. The lodging population was distributed fairly evenly in the various provinces of the Dominion. There were 13·3 p.c. of owner households and 17·4 p.c. of tenant households with one or more individual lodgers, while 7·1 p.c. of owners and 5·1 p.c. of tenants gave shelter to lodging families. The range of provincial percentages around these Dominion averages may be observed from the following statement:—

Tenure	P.C. of Households with Individual Lodgers[1]		P.C. of Households with Lodging Families	
	Canada	Provincial Range	Canada	Provincial Range
Owner—				
Rural	10·4	8·0 (Sask.)—13·1 (N.B.)	7·1	4·0 (B.C.)—11·1 (N.B.)
Urban	17·5	14·6 (Que.)—21·1 (P.E.I.)	7·1	4·0 (Sask.)—9·7(P.E.I.)
Tenant—				
Rural	12·0	9·0 (Sask.)—15·4 (B.C.)	3·6	2·9 (Alta.)—4·4 (N.B.)
Urban	19·1	17·4 (N.S.)—22·7 (Man.)	5·6	2·9 (Sask.)—7·4 (P.E.I.)

[1] Exclusive of hotels, rooming houses, etc.

These figures show the number of households with lodgers and lodging families as a percentage of the total number of households in each specified category. The high proportion of urban households with individual lodgers is quite striking as a commentary on shelter costs in the family budget. This burden was met in part by taking in lodgers in 19·1 p.c. of urban tenant and 17·5 p.c. of urban owner households. Rural percentages of 12·0 for tenants and 10·4 for owners were materially below those in urban areas. Dominion averages were typical of the different provinces as may be observed from the relatively narrow range of provincial percentages. By far the largest number of households in this group sheltered only one lodger. This was true of 73·6 p.c. of all the households with individual lodgers, the percentage for owners being 78·3 as compared with 67·9 for tenant households. In relatively few cases, were there more than four lodgers per household, this condition existing in only 1·5 p.c. of owner and 4·5 p.c. of tenant households. Corresponding rural percentages were more highly concentrated than urban figures in the group with only one lodger.

Lodging families averaged 2·7 persons, as compared with 4·3 persons for tenant households generally. Although comprising almost as great a number of persons as individual lodgers, they contributed to the composition of a much smaller number of households. Unlike individual lodgers, they did not centre predominantly in urban areas, being found in 7·1 p.c. of all urban owner households and in approximately the same percentage of rural owned homes. In cities, lodging families lived with 5·6 p.c. of the tenant households, while in rural areas 3·6 p.c. of tenant households included lodging families. The highest proportion of lodging families relative to total households occurred in the Maritime Provinces, and the lowest proportion in Western Canada. It will be noted that Provincial average percentages cluster closely around Dominion averages as was the case for individual lodgers. In only 5 p.c. of households with lodging families was there more than one such family per household.

An interesting commentary on the distribution of the lodging population is afforded by the relationship between all owned homes in rural areas and cities of over 30,000, in comparison with percentages of lodgers. These figures are shown following.

Item	P.C. of Owned Homes	P C. of Individual Lodgers in Owned Homes	P.C. of Lodging Families in Owned Homes
Rural Canada	79	73	88
Cities of over 30,000	37	31	41

The similarity of these percentages provides further evidence of the remarkably uniform distribution of the lodging population in rural and urban districts, and as between tenant and owner households.

Conclusions.—It is evident from the preceding analysis that for the Dominion as a whole the proportion of owned homes varies inversely with the density of population and, consequently, that ownership is most prevalent in rural areas. Individual localities may furnish exceptions to this statement for limited periods of time, but the underlying tendency is clearly apparent. The composition of the household gave no indication of being an important determinant of tenure. Multiple-family households in rural areas included a higher proportion of owners than other types of households, but ownership among urban households of this type was below average. The age and occupational status of the family head showed fairly definite relationships to tenure. The proportion of owners increased rapidly in the higher age groups and ownership was more prevalent among employers and persons living on income than among wage-earners. There appeared to be little connection between tenure and the conjugal condition or birthplace of family heads.

A number of the comparisons made would indicate that income is a powerful influence affecting tenure although, as noted at the beginning of the chapter, its effect is declining in urban centres. Normally, financial position improves as one grows older, so that the apparent relationship between age and ownership is likely to be an indirect reflection of a relationship between income and ownership. Although the average man's earning power commences to decline somewhere between 50 and 55, his family responsibilities by that time are also becoming lighter, so that his savings will in most cases continue to be as large or larger during the remaining years of active employment. Relatively high proportions of owners among employers and persons living on income also support the view that ownership is a function of income. Balanced against this is the fact that throughout the country as a whole tenancy has increased since the Great War despite tangible evidence of materially greater annual real income.

There appeared to be little relationship between home tenure and the distribution of the lodging population. The majority of individual lodgers and lodger families were fairly evenly distributed between owner and tenant households. Apparently lodgers as a group preferred to live with private families rather than in lodging houses.

CHAPTER VIII

RENTALS

Introductory.—Because of their importance as a factor in living costs, rental records were established in Canada as early as 1900. These are reviewed in the first section of this chapter and their behaviour is compared with that of other cost of living factors. Rental trends are then compared with trends in building costs and business conditions in an effort to discover significant relationships and subsequent sections are devoted to a cross-sectional examination of 1931 Census data, with particular attention being paid to low rental groups. These are important as a reflector of income levels among the lower paid classes of labour, and also must form one of the primary considerations of any comprehensive slum replacement or low cost housing project. It has been possible to determine approximately from this material the position of low and high rental areas.

Rental Trends.—Prior to the Great War, rental surveys were made only at irregular intervals but they served to show the uneven nature of increases during this period in different parts of the country. Population was still in a state of flux and even industries in some cases shifted position, leaving small decimated towns in their wake. Speculation and booms were the order of the day, particularly in Western Canada. The population of the City of Winnipeg, for example, increased from about 78,000 in 1905 to over 184,000 in 1913. The history of the preceding century had provided no parallel from which to obtain guidance in dealing with such rapid increases in housing needs and the problem was further complicated by the cosmopolitan nature of the population. Relatively low living standards of European immigrants added to the difficulties of enforcing even the limited building regulations which existed.

Between 1900 and 1913, there was a general increase in rentals all across Canada, ranging from approximately 40 p.c. in Prince Edward Island to over 135 p.c. in Saskatchewan and amounting to about 70 p.c. for the Dominion as a whole. Some idea of the pressure placed upon housing accommodation during this period may be gained from the fact that rents advanced faster than retail commodity prices. Foods, for example, which usually respond most quickly to price stimuli mounted only 40 p.c. between 1900 and 1913, and the advance was relatively uniform in different parts of the country. This behaviour of foods and rents offered a marked contrast to that in subsequent periods of pronounced price change, such as the years of rapid inflation and deflation following the Great War and the severe decline between 1929 and 1933. During the first of these intervals rentals rose less rapidly than commodity prices and showed no subsequent reaction, while in the second they lagged about two years behind the general decline in prices.

Since 1913, marked changes have occurred in rental trends. Although the general movement continued upward at almost the same average rate of increase until 1930, the Prairie Provinces which had previously led the advance showed little net change during this period. In fact, Saskatchewan rentals declined moderately in contrast to the general rise in the Dominion which amounted to 65 p.c. It should be noted that the greater part of the general rise occurred between 1917 and 1922. From 1930 to 1934, rentals recorded the first recession of any consequence during the present century. It amounted to about 25 p.c. and was more severe in Western than in Eastern Canada. The net result of changes since 1913 has been to equalize to a considerable extent rentals in different parts of the Dominion. For example, while marked reductions were being made in Western Canada from 1930 to 1934, the relative shortage of accommodation and the less drastic business recession in the Maritimes held rentals quite stable. Prior to 1913, when the sharpest rise was taking place in the West, advances in the Maritimes had been of small proportions. In spite of this levelling process, records show Western rentals generally to be still somewhat higher than those in Eastern Canada.

Factors Affecting Rental Levels.—The relatively permanent nature of dwellings, the stability of supply and the fact that a change of occupants involves no special degree of depreciation in value gives to dwelling values—and consequently to rentals—a peculiar character quite

distinct from other commodities or services. Of these special considerations, the stable condition of supply in relation to population is probably the most important, since it tends to make rental movements less responsive to building costs than they otherwise would be. New building in an established community is normally so small in relation to existing accommodation that its influence upon rental levels is slight. Changes in rentals come slowly and, often as not, when they do occur it is in response to economic conditions generally rather than to changes in building costs. This was undoubtedly the case in Canada between 1930 and 1936.

Building Costs.—Records of residential rentals and building costs extend back to the beginning of the present century. Prior to 1913, the movement of rentals was quite similar to that of building costs, in particular to that of wages in the building trades. An index of rentals for this period based upon six-room workmen's houses advanced from 61·7 in 1900 to 100·0 in 1913. Wage rates in the building trades mounted from 60·3 in 1901 to 100·0 in 1913. Building materials and interest rates on city mortgages showed relatively less change, an index for material prices mounting from 74·9 to 100·0, while that of interest rates increased from 82·5 to 100·0.

The disturbed condition of prices in the decade following 1913 made subsequent relationships much less close. Rentals and wage rates, however, have continued to maintain approximately the same trends. The course of both was irregularly upward from the 1913 level of 100·0 to 1930, when the rent index was 165·2 and the wage index 203·2. These two series, unlike material prices, failed to react to any extent following 1920 when commodity prices dropped so sharply after the period of War and post-War inflation. The index of material prices after rising more abruptly than rentals and wage rates between 1913 and 1920, subsequently declined steadily from 1920 to 1932. The extent of this movement is indicated by the 1920 index of 214·9 and the 1932 index of 115·2. Rents and wage rates decreased from 1930 to 1934, before turning upward again in 1935. This decline in rentals from 165·2 to 125·0 and in building trades wage rates from 203·2 to 154·8 was their first appreciable recession in 35 years. Urban mortgage rates since 1913 have fluctuated within narrow limits. Although they showed only a slight decrease between 1933 and 1935, mortgage rates are now lower than in 1913, while other building costs are appreciably above 1913 levels. (See statement on page 509.)

The Volume of Residential Building.—As already intimated, the relation of rentals to the amount of residential building is even less close than that between rentals and building costs. Building tends to accelerate with improvement in business conditions and to decline in periods of depression. It is true that rentals do react to economic conditions but they lag materially behind and changes are much less pronounced. Further, records show that lower costs fail to have much effect upon building until business activity revives and incomes increase, although the need for more accommodation may have become acute long before recovery occurs. These statements are borne out by the experience of the past fifteen years.

Following the unstable period immediately after the Great War, business recovery and residential building both showed moderate improvement in 1922. Construction suffered a setback in the next two years but joined business in subsequent steady improvement which continued unbroken until 1928, a peak year for residential building. The value of industrial building, however, continued upward until 1929 along with the general volume of business. The reaction which followed was much more pronounced for building than for business generally, as may be noted from the following statement. Definite signs of recovery, shared by both building and business conditions, appeared in 1934 and persisted throughout the next five years.

As already intimated, the movement in rentals during the first part of the post-War period was gradually upward but bore no significant relationship to building. An index of rentas converted to a 1926 base, mounted from 94·2 in 1921 to 100·0 in 1926, while corresponding seriel for the value of residential building and the volume of business each advanced to 100·0 from 70·0 and 66·5, respectively. The 1930 high of 105·9 for rentals contrasted with peaks of 127·0 for building in 1928 and of 125·5 for business in 1929. Subsequent low points were as follows: rentals 80·1 in 1934, volume of business 78·7 in 1932, and residential building 21·8 in 1933. Although the building series is considerably more sensitive than that for business volume, the movements of the two are definitely similar. In so far as rentals show any relationship to the volume of building it appears to be positive rather than negative. This is the reverse of conditions in ordinary commodity markets in which increasing supply tends to produce a decline in prices.

INDEX NUMBERS OF RENTALS, VALUE OF RESIDENTIAL CONTRACTS AWARDED AND THE PHYSICAL VOLUME OF BUSINESS, CANADA, 1919-1939

(1926=100)

Year	Index of		
	Residential Rentals	Value of Residential Building Contracts Awarded	Physical Volume of Business
1919	75·6	42·9	71·3
1920	86·5	50·1	75·0
1921	94·2	70·0	66·5
1922	98·1	95·1	79·1
1923	100·6	89·1	85·5
1924	101·3	83·3	84·6
1925	101·3	88·1	90·9
1926	100·0	100·0	100·0
1927	98·8	114·0	106·1
1928	101·2	127·0	117·3
1929	103·3	117·7	125·5
1930	105·9	85·1	109·5
1931	103·0	74·6	93·5
1932	94·7	26·4	78·7
1933	85·1	21·8	79·7
1934	80·1	27·9	94·2
1935	81·3	33·2	102·4
1936	83·7	39·1	112·2
1937	86·9	51·3	122·7
1938	89·8	50·2	112·9
1939	90·0	61·6	122·4

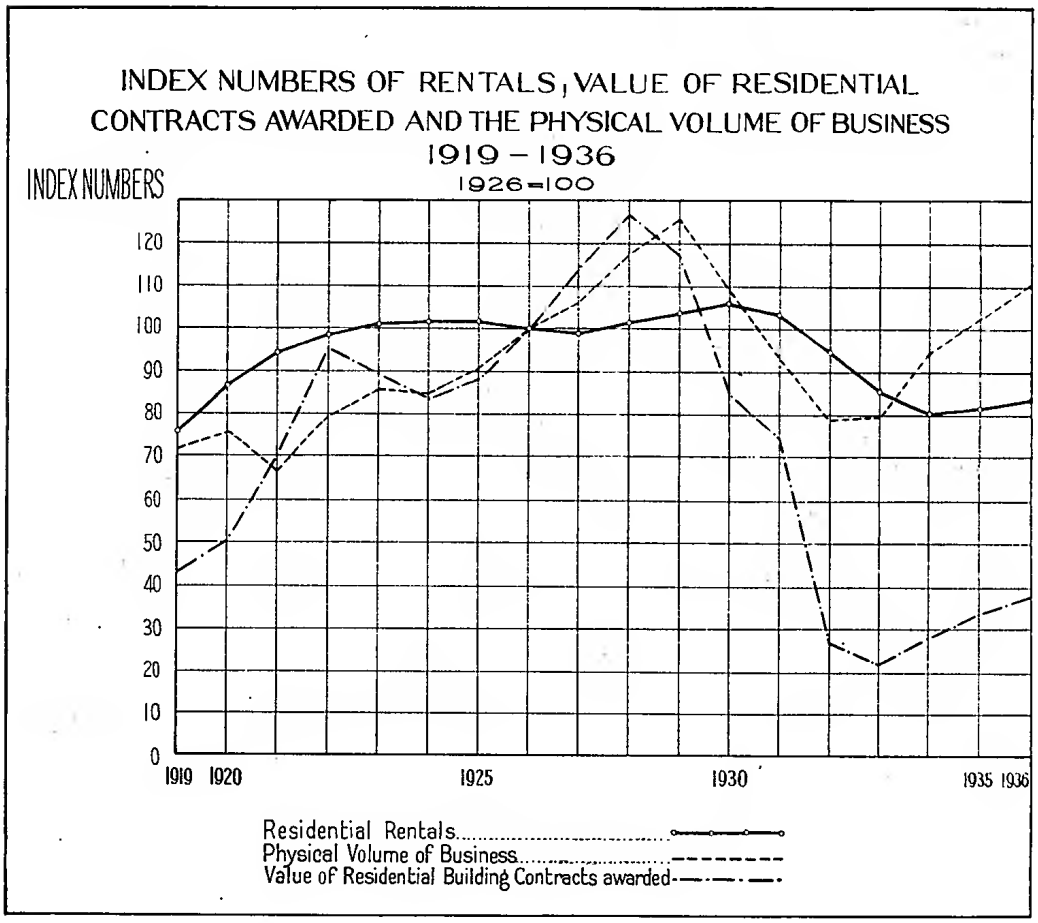


Chart 20

Income.—The experience of the years between 1930 and 1934 indicated clearly that sharp declines in income may outweigh supply and cost of factors in the determination of rental levels. Judged by ordinary standards of measurement a serious shortage of low rental dwellings developed during these years, but rents continued to decline in spite of this. The recession was most acute in the more expensive types of dwellings but reductions were made also for lower grade homes. Subsequent increases in rents have been very gradual, more in keeping with improvement in incomes than with the growing need for new and replacement building.

INDEX NUMBERS OF RENTALS AND RELATED FACTORS, CANADA, 1900-1939
(1913=100)

Year	Index of			
	Rents of Six-Room Workmen's Houses[1]	Wholesale Prices of Building Materials	Wage Rates in Building Trades	Interest Rates on City Mortgages
1900	61·7	74·9	.....	82·5
1901	.....	72·5	60·3	82·9
1902	.....	74·9	64·2	82·8
1903	.....	80·7	67·4	83·2
1904	.....	83·2	69·7	84·2
1905	73·5	82·4	73·0	82·3
1906	.....	86·5	76·9	84·6
1907	.....	89·7	80·2	89·6
1908	.....	97·0	81·5	87·5
1909	83·6	94·8	83·1	88·4
1910	86·9	92·5	86·9	90·6
1911	88·4	97·1	90·2	91·6
1912	94·9	96·8	96·0	94·6
1913	100·0	100·0	100·0	100·0
1914	97·0	93·8	100·8	100·5
1915	94·1	90·3	101·5	101·9
1916	95·0	103·7	102·4	103·1
1917	102·0	130·5	109·9	101·8
1918	108·0	150·3	125·9	103·2
1919	117·9	175·8	148·2	102·0
1920	134·9	214·9	180·9	103·9
1921	147·0	183·2	170·5	104·3
1922	153·0	162·2	162·5	104·4
1923	156·9	167·0	166·4	104·1
1924	158·0	159·1	169·7	102·6
1925	158·0	153·5	170·4	99·5
1926	156·0	149·2	172·1	98·1
1927	154·1	143·4	179·3	97·4
1928	157·9	145·3	185·6	95·3
1929	161·1	147·7	197·5	97·5
1930	165·2	135·5	203·2	98·7
1931	160·7	122·2	195·7	98·1
1932	147·7	115·2	178·2	101·5
1933	132·8	116·8	158·0	101·3
1934	125·0	123·1	154·8	97·1
1935	126·8	121·2	159·8	90·0
1936	130·6	127·3	160·8	.....
1937	135·6	140·8	165·3	.....
1938	140·1	132·9	169·4	.....
1939	140·4	133·8	170·7	.....

[1] Includes also apartments and flats subsequent to 1926 for both workmen's and middle class dwellings.

A Cross-Section of Rentals in 1931.—Census tables for 1931 showed monthly rentals in the following groups: under $10, $10 to $15, $16 to $24, $25 to $39, $40 to $59, and $60 and over. The inequality of these intervals unfortunately distorted the actual distribution, a fact which will be commented upon subsequently. Nevertheless, a number of significant points are revealed from the data in their basic form. All figures relating to rental distribution refer to households with husband and wife living together, these comprising 530,480 out of 675,631 urban tenant households. Those with only one family head have been excluded from calculations of rent payments, since their income is frequently distributed in an abnormal manner.

The Maritime Provinces in 1931 were definitely a lower rental area than Central or Western Canada as may be observed from the following cumulative frequency table. The highest general rental levels occurred in Manitoba and Ontario. Saskatchewan and Alberta it will be noted had unusual rental distributions with a relatively large proportion of households in both the low and high rent groups, while the number of medium rent tenants was less than in other parts of the country. (See Part II, Table 22.)

PERCENTAGES OF URBAN TENANTS WITHIN SPECIFIED MONTHLY RENTAL LIMITS, CANADA AND PROVINCES, 1931

Province	P.C. of Tenants Paying less than				
	$10	$16	$25	$40	$60
CANADA	6	27	53	82	94
Prince Edward Island	23	57	77	94	99
Nova Scotia	24	55	72	91	97
New Brunswick	10	39	63	89	97
Quebec	6	28	61	86	94
Ontario	5	22	44	79	94
Manitoba	6	26	42	70	91
Saskatchewan	12	41	57	79	93
Alberta	9	33	52	81	96
British Columbia	5	23	47	82	95

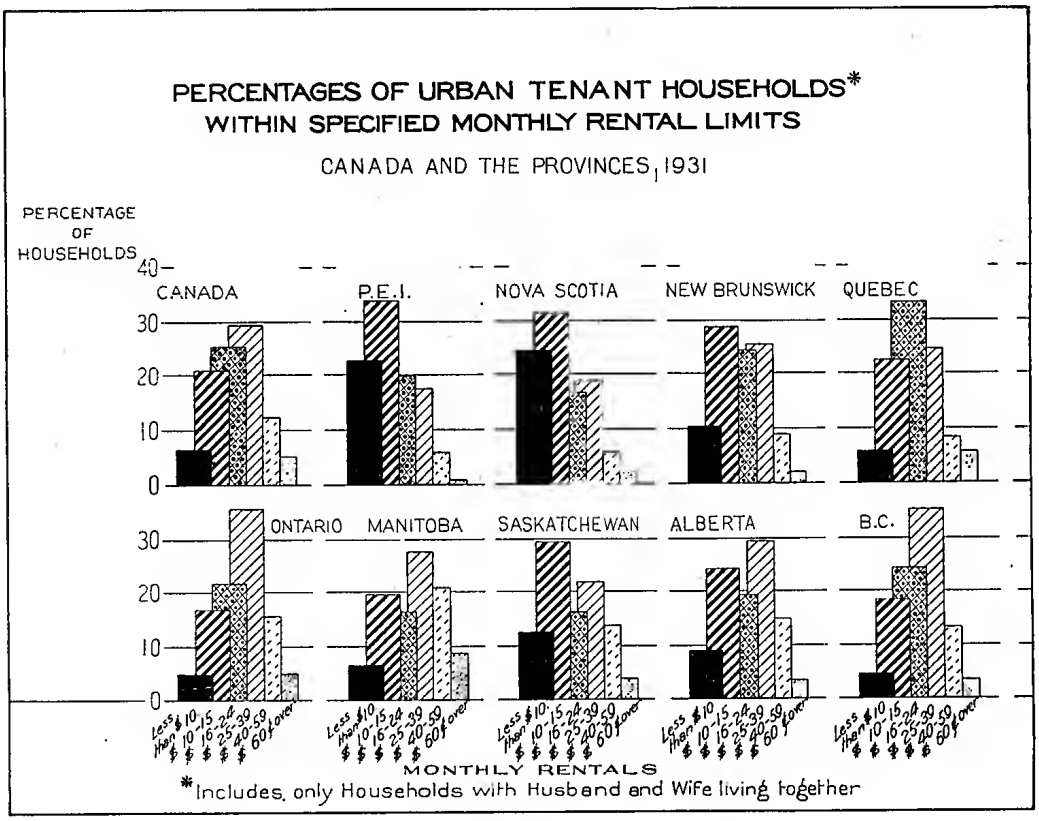


Chart 21

The number of tenants paying less than $16 per month is surprisingly large in all parts of Canada, ranging from 22 p.e. for Ontario to 57 p.c. for Prince Edward Island. As will be noted later, the relatively small urban centres, which are predominantly low rental areas, were mainly responsible for the high range of these percentages. Larger cities, however, have also contributed substantial numbers to this group. It is significant that the average amount paid to wage-earners in the manufacturing industries in 1931 was $957 and that no normally distributed family budget of this amount could provide for monthly shelter costs much in excess of $15. Actually, there were 51,778 families comprising 12·1 p.c. of tenant households in cities of over 30,000 paying less than $16 per month in 1931. The proportions of monthly rentals of $40 or more ranged from 6 p.c. in Prince Edward Island to 30 p.c. in Manitoba. The fact that Winnipeg, a relatively large city, dominated Manitoba figures was mainly responsible for this large percentage of high rentals.

As already pointed out, uneven rental intervals tend to give a faulty idea of modal or typical rental levels. No less than 14 of the 20 cities of over 30,000 showed greatest concentration in the $25 to $39 group and five of the remainder were included in the $16 to $24 group. Actually, typical rental values were considerably lower than these figures would indicate. This has been demonstrated by new frequency distributions which have been estimated for cities of over 30,000 and for all urban tenants in Canada, showing rentals in $5 intervals. Although not perfectly accurate, this revised arrangement indicates plainly that points of greatest concentration were commonly below $25 per month, except in the four Western Provinces. The Dominion distribution, including all urban areas, indicated the greatest concentration of monthly rentals to be between $10 and $14, although Saint John, Halifax and Three Rivers were the only cities of over 30,000 of which this range was typical. The rearranged data show clearly the scattered distribution and the bi-modal tendencies occurring in certain of the Prairie cities. A fairly heavy concentration occurred in the intervals from $5 to $9 and $35 to $39 in these areas but there was no typical amount such as could be discerned for a number of Eastern centres. These observations may be verified by referring to the following statement which shows the estimated percentage of tenants within different rental ranges. (See Part II, Table 23.)

Frequency distributions, besides indicating the amount of typical rentals, also furnish the basis of an approximate idea of relative rental levels between cities and provinces. It is fairly evident, for example, that Saint John, with 89 p.c. of tenants paying less than $40 per month has a generally lower scale of rentals than Winnipeg where only 63 p.c. of tenants were included in the same range. However, a more exact notion of rental levels may be obtained by examining records of rooms occupied at specified rents in different cities. This information supplemented by a statement of general qualitative attributes has been obtained for 1931.

The relative proportion of tenant families at progressive rental levels varied considerably in cities of over 30,000, but the differences were not so great as to prevent a general appraisal for cities as a whole. The largest number of rooms per rental dollar were obtained in a limited number of Eastern cities of moderate size, including Saint John, Quebec, Three Rivers, Ottawa, London and Brantford. Rentals slightly higher than those in the foregoing cities, were reported from another group of centres confined, with one exception, to Eastern Canada. It included Halifax, Montreal, Verdun, Hamilton, Kitchener and Victoria. The Western cities, along with Toronto and Windsor, exhibited a definitely higher scale of rentals per room than those noted above. As already intimated, these distinctions were not always clear cut. Saint John, for example, with the largest number of rooms per dollar in lower rental groups, was preceded by six other cities for homes renting for $40 or more per month. In Quebec cities, on the other hand, the average number of rooms in the higher rental groups was relatively larger than in the lower rental ranges. Throughout the Dominion the average number of rooms in all rental groups was appreciably larger for households of two or more families than for single-family households, indicating the cheaper type of accommodation occupied by the former. These differences were particularly marked in the high rental groups. In Winnipeg, for instance, where disparities were largest, one-family households paying from $40 to $59 per month averaged 4·9 rooms, while two-or-more-family households in the same rental group averaged 7·4 rooms. Differences of two rooms in the $60 and over group were not uncommon. (See Part II, Table 24.)

PERCENTAGE DISTRIBUTION[1] OF HOUSEHOLDS LIVING IN RENTED URBAN HOMES CLASSIFIED ACCORDING TO MONTHLY RENTAL, CITIES OF 30,000 POPULATION AND OVER, 1931

Monthly Rental	Total Urban	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Quebec, Que.	Verdun, Que.	Three Rivers, Que.	Toronto, Ont.	Hamilton, Ont.	Ottawa, Ont.	London, Ont.
TOTAL	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
$ 0-$ 4	0·4	0·3	0·4	0·1	0·1	–	0·1	–	0·1	–	0·1
5- 9	6·1	3·7	5·2	0·9	1·4	0·2	1·9	0·8	1·9	0·8	0·8
10- 14	17·6	18·2	26·7	13·6	12·5	4·6	20·2	5·8	10·1	7·4	7·6
15- 19	15·9	14·6	20·7	20·3	19·4	22·2	25·1	8·5	15·3	9·7	14·6
20- 24	13·4	12·1	14·2	20·9	19·8	28·4	24·6	10·1	17·0	11·2	16·0
25- 29	11·5	11·7	9·7	12·9	14·4	20·2	11·1	13·2	15·7	13·3	15 8
30- 34	10·0	11·1	7·0	9·1	9·4	14·0	5·6	14·5	13·9	15·3	14·6
35- 39	7·9	9·5	4·8	6·4	6·6	7·0	4·0	12·7	10·9	12·3	11·4
40- 44	5·4	6·0	3·3	4·1	4·2	1·8	2·7	9·0	6·7	9·0	7·0
45- 49	3·4	3·4	2·2	2·6	2·8	0·7	1·5	6·7	3·7	6·5	3·8
50- 54	2·1	2·0	1·5	1·8	1·8	0·4	0·8	5·3	1·7	4·1	2·2
55- 59	1·3	1·2	1·1	1·3	1·2	0·2	0·6	3·7	0·7	2·7	1·5
60 and over	5·0	6·2	3·2	6·0	6·4	0·3	1·8	9·7	2·3	7·7	4·6

Monthly Rental	Windsor, Ont.	Kitchener, Ont.	Brantford, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.	Victoria, B.C.
TOTAL	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
$ 0-$ 4	–	0·3	0·1	0·2	0·2	0·1	–	0·5	0·1	0·2
5- 9	0·5	2·8	2·7	2·9	2·4	1·8	1·2	4·7	2·1	2·2
10- 14	4·5	17·5	18·8	12·9	16·0	14·2	10·0	16·2	10·7	18·2
15- 19	6·0	14·0	21·9	9·7	10·0	9·6	10·7	12·2	12·8	18·2
20- 24	7·8	12·4	20·1	8·0	6·7	7·6	11·1	9·7	13·1	16·3
25- 29	15·9	14·0	13·3	9·4	8·2	9·7	12·3	11·5	13·3	14·5
30- 34	18·8	15·1	9·4	10·4	9·8	11·2	13·6	12·5	12·9	12·5
35- 39	17·9	13·5	6·7	9·4	9·0	10·2	11·5	10·6	12·1	8·6
40- 44	12·1	5·0	3·5	8·0	7·9	8·9	8·8	7·0	8·7	4·1
45- 49	6·1	2·2	1·1	6·9	6·9	7·9	6·5	4·9	4·7	1·8
50- 54	3·6	1·0	0·5	5·9	6·0	6·8	4·7	3·6	2·7	0·8
55- 59	2·1	0·5	0·3	4·9	5·4	5·8	3·5	2·5	1·2	0·5
60 and over	4·7	1·7	1·6	11·4	11·5	6·2	6·1	4·1	5·6	2·1

[1] Estimated distribution in $5 intervals.

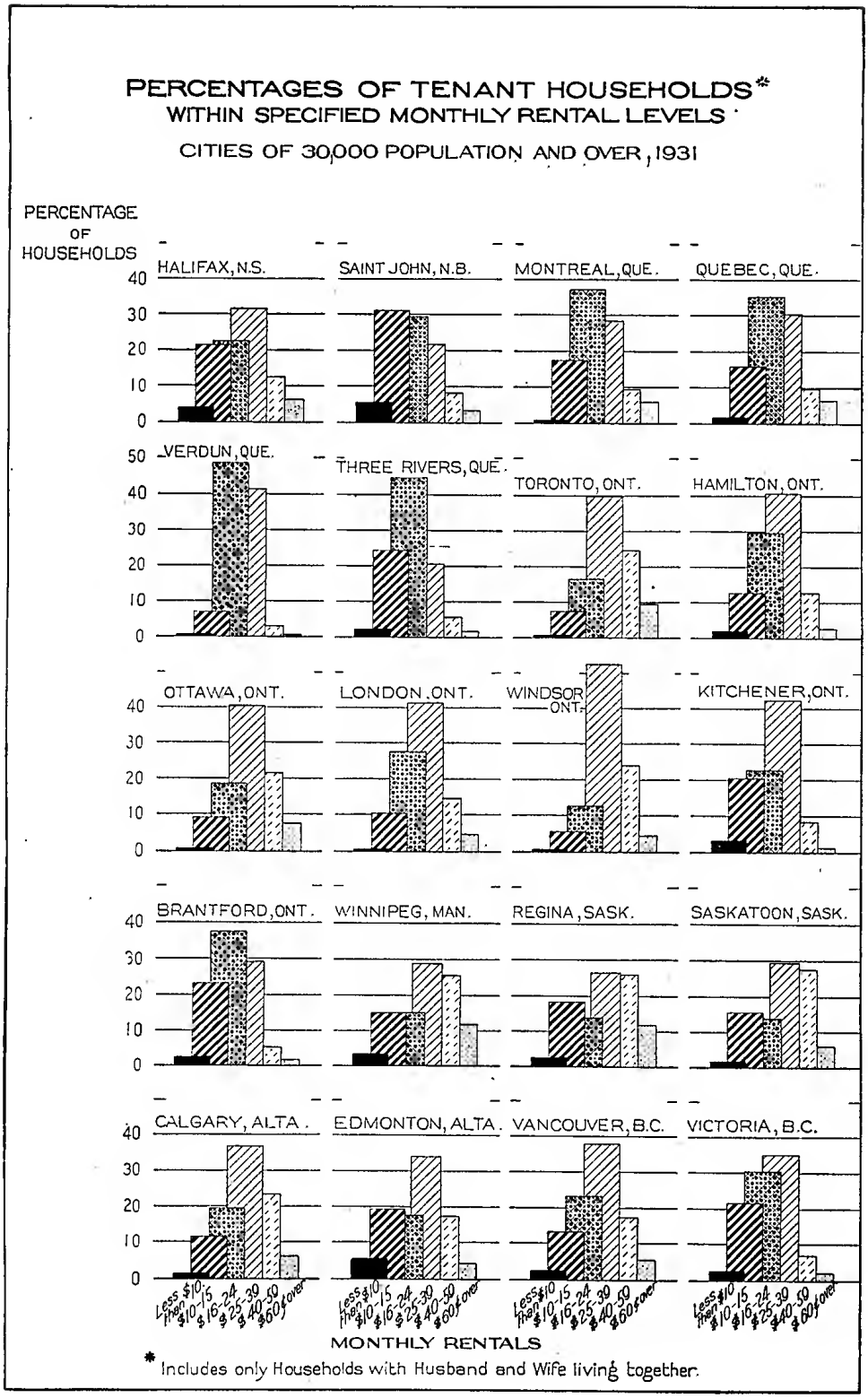


Chart 22

36755—33

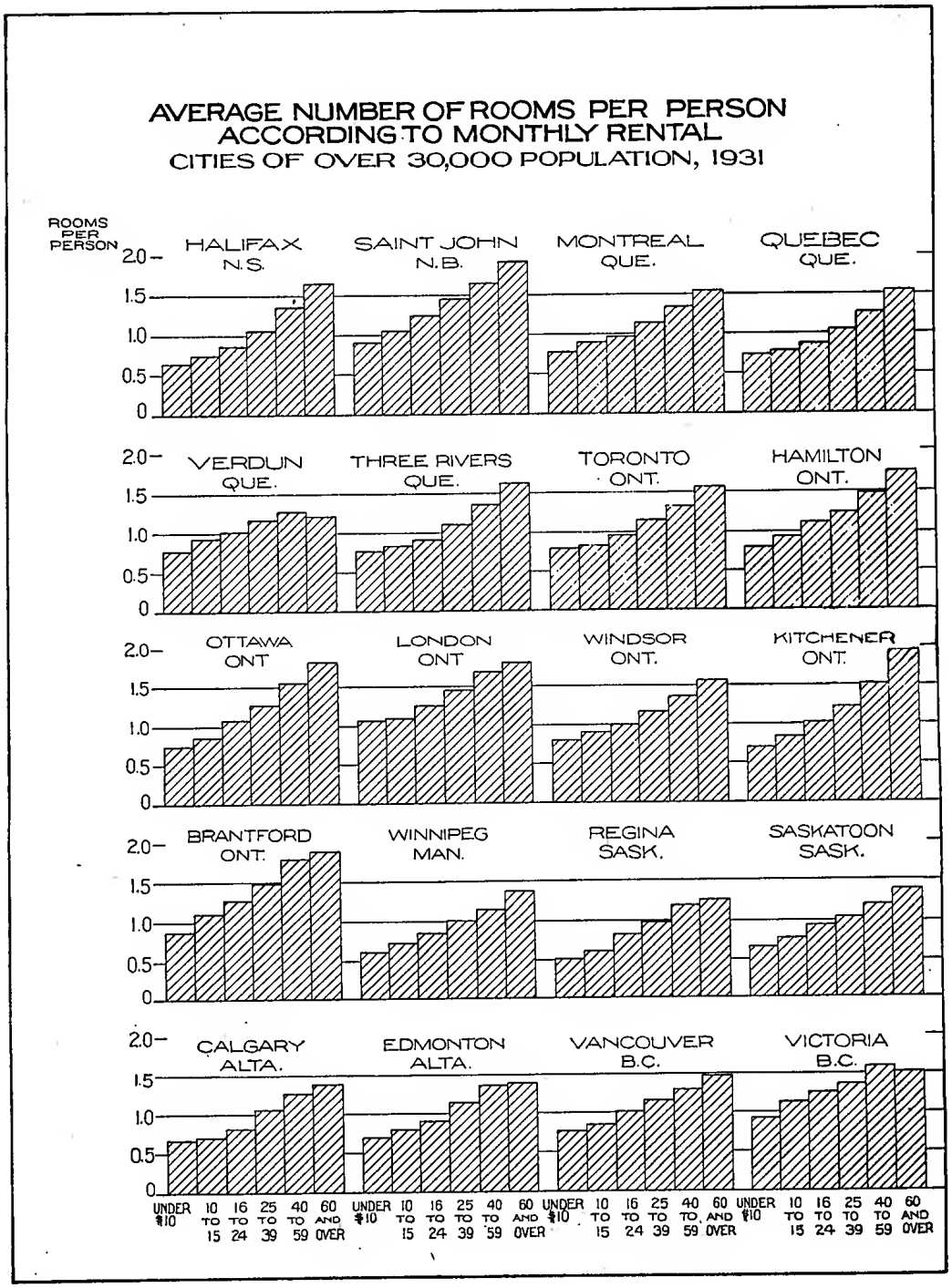

AVERAGE NUMBER OF ROOMS PER PERSON
ACCORDING TO MONTHLY RENTAL
CITIES OF OVER 30,000 POPULATION, 1931
ROOMS PER PERSON
2.0
1.5
1.0
0.5
0
HALIFAX N.S.
SAINT JOHN N.B.
MONTREAL QUE.
QUEBEC QUE.
VERDUN QUE.
THREE RIVERS QUE.
TORONTO ONT.
HAMILTON ONT.
OTTAWA ONT
LONDON ONT
WINDSOR ONT.
KITCHENER ONT.
BRANTFORD ONT.
WINNIPEG MAN.
REGINA SASK.
SASKATOON SASK.
CALGARY ALTA.
EDMONTON ALTA.
VANCOUVER B.C.
VICTORIA B.C.
UNDER $10
10 TO 15
16 TO 24
25 TO 39
40 TO 59
60 AND OVER

Chart 23

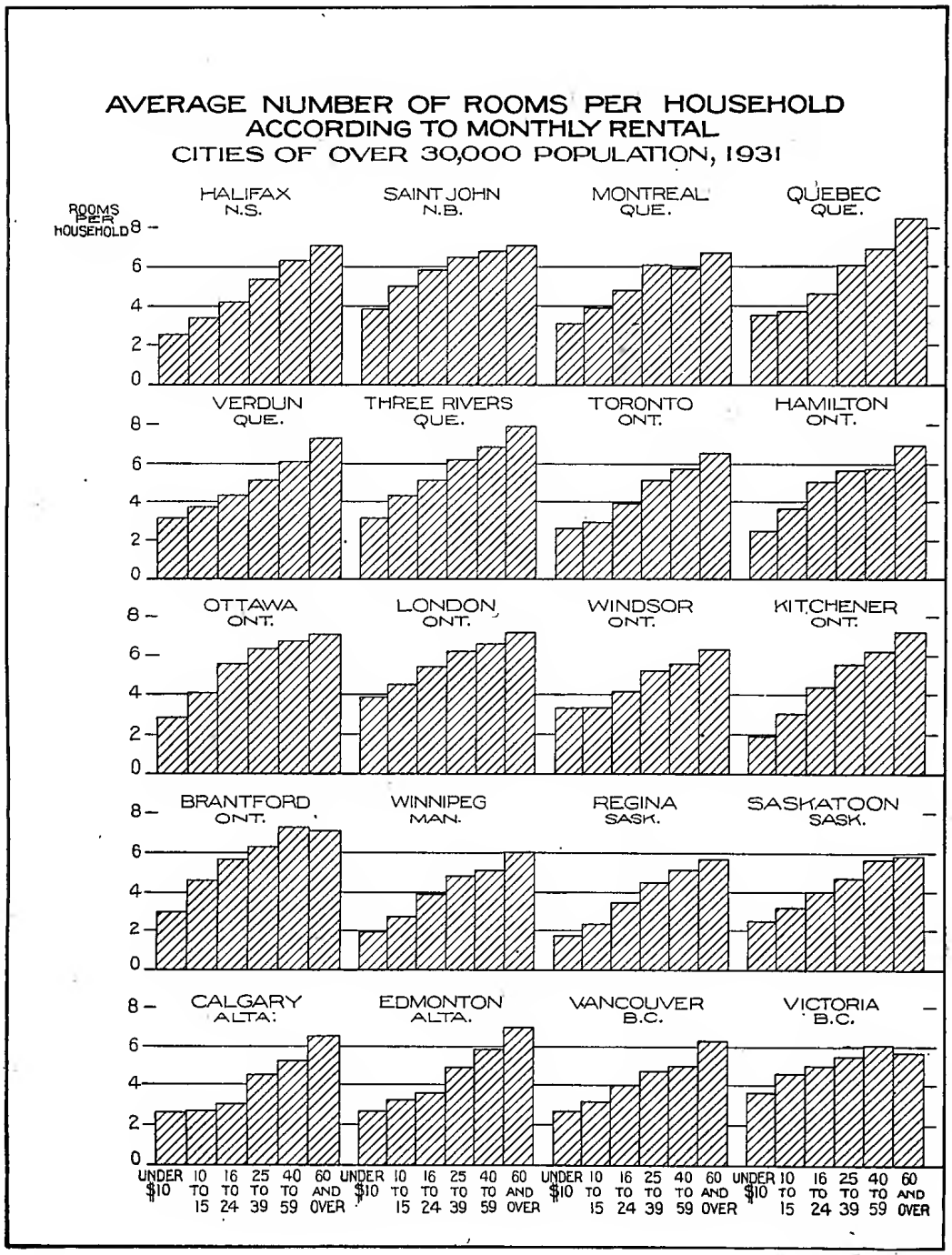

AVERAGE NUMBER OF ROOMS PER HOUSEHOLD
ACCORDING TO MONTHLY RENTAL
CITIES OF OVER 30,000 POPULATION, 1931
ROOMS PER HOUSEHOLD
HALIFAX N.S.
SAINT JOHN N.B.
MONTREAL QUE.
QUEBEC QUE.
VERDUN QUE.
THREE RIVERS QUE.
TORONTO ONT.
HAMILTON ONT.
OTTAWA ONT.
LONDON ONT.
WINDSOR ONT.
KITCHENER ONT.
BRANTFORD ONT.
WINNIPEG MAN.
REGINA SASK.
SASKATOON SASK.
CALGARY ALTA.
EDMONTON ALTA.
VANCOUVER B.C.
VICTORIA B.C.
0
2
4
6
8
UNDER $10
10 TO 15
16 TO 24
25 TO 39
40 TO 59
60 AND OVER

Chart 24

An idea of the number of rooms let to households paying specified rentals, may be obtained from the following statement:—

RANGE OF THE AVERAGE NUMBER OF ROOMS PER HOUSEHOLD, BY RENTAL GROUPS, CITIES OF 30,000 POPULATION AND OVER, 1931.

Rental Group	Five Eastern Provinces		Four Western Provinces	
Under $10	2·0 (Kitchener)	— 3·9 (Saint John, London)	1·8 (Regina)	— 3·7 (Victoria)
$10-$15	2·9 (Toronto)	— 5·1 (Saint John)	2·4 (Regina)	— 4·6 (Victoria)
16- 24	4·0 (Toronto)	— 5·9 (Saint John)	3·1 (Calgary)	— 5·1 (Victoria)
25- 39	5·2 (Toronto, Verdun)	— 6·6 (Saint John)	4·5 (Regina, Calgary)	— 5·5 (Victoria)
40- 59	5·6 (Windsor)	— 7·3 (Brantford)	5·1 (Winnipeg, Vancouver)	— 5·7 (Saskatoon)
60 and over	6·4 (Windsor)	— 8·5 (Quebec)	5·7 (Regina)	— 7·1 (Edmonton)

Additional information of interest is given in Part II, Tables 25, 26 and 27.

Housing Facilities of Tenant Homes.—Although factors contributing to differences in number of rooms at comparable rent levels are extremely complex, it has been possible to account for some of the more marked differences by reference to supplementary data obtained from real estate and trust companies handling rented properties in 58 Canadian cities. This information is more important, however, as an indication of the quality of accommodation generally being obtained. Reports were received from 175 firms, indicating typical features of workmen's and middle-class dwellings, including structural materials, interior finish, plumbing and refrigeration equipment, heating systems, garage facilities, janitor service and, in the case of workmen's homes, the approximate amount of floor space. Although no clear cut distinction was drawn between workmen's and middle-class dwellings, reporting firms were asked to identify the former with wage-earners doing heavy manual labour or working in factories. Homes of better class clerical workers and skilled craftsmen were to be included in the second group.

Considering workmen's dwellings first, it was found that the typical home in all of the 58 cities was equipped with electric lighting, running water and water closet. Nearly all had a bathroom and electricity or gas available for cooking. Houses generally were heated by hot air or hot water systems, while steam was employed to a considerable extent in flats and apartment dwellings, particularly in Western Canada. Stoves were still widely used for heating flats in a number of Eastern cities. In the large majority of cases, the typical workmen's dwelling was of pre-War construction and finished inside with softwood floors and trimmings. The average amount of floor space ranged from 600 to 900 square feet in Eastern Canada but was roughly 100 square feet less in Western cities.

There were noteworthy variations from the average characteristics outlined above which help to explain spreads indicated in the statement immediately preceding. The unusually low rentals in Saint John, for example, applied to homes in which the floor space was smaller than for most Eastern cities, and in which bathrooms were not typical, although running water and toilet fixtures were available. Flats, a prevalent type of dwelling, were heated with stoves at the tenant's expense, a method which is usual in Maritime and Quebec cities. In Western cities, on the other hand, flat and apartment rentals almost always include the cost of heating and generally of janitor service. The inclusion of garages with workmen's houses was not characteristic of any single area but garages were reported occasionally.

The majority of middle class homes were finished inside with hardwood and, with the exception of single houses, heating costs were included in the rent paid. Hot air and hot water heating systems were typical of houses and flats, with hot water and steam predominant in apartment buildings. Almost all middle-class dwellings included standard bathroom plumbing fixtures in addition to electric light and gas or electricity for cooking purposes. Electric refrigerators were commonly included as part of the regular equipment of apartments in this group. As intimated previously, building materials of single and semi-detached units varied according to geographic areas. In Eastern Canada, brick prevailed, while frame buildings were predominant in the Western Provinces. The use of stucco for exterior surfacing has grown rapidly in recent years, particularly in the West. Larger multiple-unit dwellings were usually built of brick.

CHARACTERISTICS OF TYPICAL WORKING CLASS DWELLINGS IN CANADIAN CITIES, MAY, 1934.

City	Reports Received	Preferences in Types of Dwellings					Age B—before A—after the War	Predominant Number of Rooms	Conveniences (x indicates they are usual)					Size of Family			Floor Space (sq. ft.)
		Single	Semi-Detached	Row	Apartment	Flat			Bathroom	Electricity	Gas	Running Water	Water Closet	Adults	Children	Total	
Maritimes—																	
Charlottetown	3	1	2	4	3	–	B	6	–	x	–	x	x	2	4	6	900
Amherst	1	1	2	5	4	3	B	7	x	x	–	x	x	2	4	6	550
Halifax	5	2	2	–	3	1	B	5	x	x	–	x	x	2	4	6	850
Sydney	2	2	1	–	4	3	B	6	x	x	–	x	x	2	5	7	800
Chatham	1	1	2	–	–	–	B	6	–	x	–	x	x	2	5	7	1,200
Bathurst	1	1	–	2	–	3	A	6	x	x	–	x	x	2	4	6	–
Moncton	2	2	2	–	–	1	B	5	x	x	x	x	x	2	5	7	900
Saint John	3	[1]	[1]	[1]	[1]	1	B	6	–	x	–	x	x	2	3	5	650
Quebec—																	
Montreal	7	5	4	2	3	1	B and A	5	x	x	x	x	x	2	3	5	650
Sherbrooke	1	5	4	3	2	1	B	–	50/50	x	x	x	x	2	5	7	800
Ontario—																	
Brantford	4	1	2	3	3	4	B	6	x	x	x	x	x	2	3	5	800
Brockville	1	1	2	4	5	3	B	5	–	x	–	x	x	2	3	5	700
Chatham	3	1	2	3	3	4	B	5	x	x	x	x	x	2	3	5	700
Fort William	5	1	2	4	2	3	B	5-6	x	x	–	x	x	2	3	5	900
Guelph	3	1	2	–	–	–	B	6	x	x	x	x	x	2	3	5	750
Hamilton	3	1	2	4	3	3	B	6	x	x	x	x	x	2	3	5	750
Galt	1	1	2	–	3	–	–	–	x	x	x	x	x	2	3	5	700
Kingston	1	1	2	3	5	4	B	6	x	x	x	x	x	2	4	6	800
Kitchener	2	1	2	3	3	–	B and A	5	x	x	x	x	x	2	4	6	550
London	3	1	3	4	2	3	B	5-6	x	x	x	x	x	2	3	5	750
Niagara Falls	4	1	2	3	3	4	Mostly A	6	x	x	x	x	x	2	3	5	900
North Bay	2	1	3	5	2	4	B	6	x	–	x	x	x	2	5	7	900
Orillia	2	1	3	4	4	3	B	6	x	x	–	x	x	2	4	6	800
Oshawa	2	1	2	2	2	2	B and A	5	x	x	–	x	x	2	4	6	1,000
Ottawa	6	3	1	1	2	1	B	6	x	x	x	x	x	2	3-4	5-6	800
Owen Sound	2	1	2	3	3	3	B	5-6	x	x	x	x	x	2	3-4	5-6	750
Peterborough	2	1	2	3	3	4	B	6	x	x	–	x	x	2	4	6	600
Port Arthur	5	1	–	–	2	3	B	6	x	x	–	x	x	2	3	5	900
St. Catharines	5	1	2	4	3	3	Mostly A	5-6	x	x	x	x	x	2	2-3	4-5	800
St. Thomas	2	1	2	3	4	2	B	5-6	x	x	x	x	x	2	3-4	5-6	850
Sarnia	4	1	2	3	2	2	B	5	x	x	x	x	x	2	3	5	700
Sault Ste. Marie	4	1	4	5	2	3	B	6	–	x	x	x	x	2-3	3-4	5-7	550
Stratford	2	1	4	5	2	3	B	6	x	x	–	x	x	2	2-3	4-5	900
Sudbury	1	1	–	–	2	–	A	6	x	x	–	x	x	2	2	4	–
Timmins	1	1	2	–	3	4	A	4-5	–	x	–	x	x	3	5	8	600
Toronto	8	1	1	4	2	3	B and A	6	x	x	x	x	x	2	2	4	720
Windsor	3	1	2	5	4	3	A	5-6	x	x	x	x	x	2	3	5	750
Woodstock	1	1	2	–	–	–	B	5	x	x	x	x	x	2	3	5	550
Prairies—																	
Brandon	2	1	3	4	2	–	B	6	x	x	x	x	x	2	4	6	500
Winnipeg	8	1	4	3	2	5	B	5-6	x	x	x	x	x	2	3	5	600
Estevan	2	1	–	–	2	–	B	5	–	x	–	–	–	2	4	6	800
Moose Jaw	3	1	5	3	2	4	B	6	x	x	–	x	x	2	3	5	700
Prince Albert	3	1	5	3	2	4	B	5	x	x	–	x	x	2	2	4	750
Regina	4	1	3	4	2	3	Mostly A	5	x	x	–	x	x	2	3	5	600
Saskatoon	8	1	3	2	4	5	B	5	x	x	–	x	x	2	3	5	600
Calgary	5	1	3	5	2	4	B and A	5	x	x	x	x	x	2	3	5	800
Drumheller	1	1	2	3	5	4	A	4	–	x	–	x	–	2	3	5	450
Edmonton	9	1	3	4	2	4	Mostly B	5	x	x	x	x	x	2	3	5	700
Lethbridge	4	1	2	–	3	4	B	5	50/50	x	x	x	x	2	3	5	600
Medicine Hat	2	1	2	3	–	4	B	5	x	x	x	x	x	2	3-4	5-6	650
British Columbia—																	
Nanaimo	1	1	–	–	–	–	B	4-5	x	x	–	x	x	2-3	3-4	5-7	–
Fernie	3	1	2	–	–	–	B	5	–	x	–	x	x	2	4	6	900
Nelson	2	1	2	–	–	2	B	5	x	x	–	x	x	2	3	5	550
New Westminster	1	1	–	2	–	–	50/50	4	x	x	–	x	x	2	3	5	500
Prince Rupert	3	1	–	–	2	2	B and A	5	x	x	–	x	x	2	2	4	800
Rossland	1	1	–	–	2	3	B	5	x	x	–	x	–	2	2	4	–
Vancouver	11	1	3	4	2	4	B and A	6	x	x	x	x	x	2	3	5	700
Victoria	6	1	2	5	3	4	B	5-6	x	x	x	x	x	2	3	5	650

[1] These also important but little to choose between them.

Summary and Conclusions.—Rentals are characteristically more rigid than commodity prices and tend to lag behind movements in most other living costs. The intense pressure of population during the period of heavy immigration prior to 1913 disturbed this relationship temporarily and rentals mounted more rapidly than living costs. It is highly unlikely that this situation will ever recur. After the Great War, a serious housing shortage resulted in rentals moving directly opposite to declining commodity prices and a gradual rise continued until 1930.

The war-time advance in rentals had been much less than for commodities. In the years of severe economic depression from 1930 to 1933, inclusive, rentals declined moderately in response to the heavy pressure exerted by sharply reduced incomes. This influence was stronger than that of the housing shortage which developed in many areas. Declines in building costs of greater magnitude than the reduction in rentals failed to stimulate building to relieve this shortage which still existed in 1936 after economic conditions had been improving for three years.

Evidence of unsatisfactory housing conditions in 1931 was provided by the decennial census which showed that over 50,000 families in the 20 largest cities were paying rent of less than $16 per month. It has been established that satisfactory modern homes in large cities cannot be rented below this figure without loss. Typical urban rentals varied widely from between $10 and $14 to between $30 and $34, depending upon complex combinations of causes. These included differences in the types of dwellings which were most popular, in living standards, in climate and in building costs. Rent per room was generally a moderate amount higher in the Prairie Provinces than elsewhere in Canada.

CHAPTER IX

THE VALUE OF URBAN OWNED HOMES

Distribution According to Value.—Estimates of value were placed upon owned homes in Canadian cities at the time of the 1931 Census, there being 252,586 in cities of over 30,000 population and 312,498 in cities of less than 30,000. With the exception of estimates for total farm buildings, no record was made of the value of rural homes. Less than 30 p.c. of urban owned homes were valued at more than $5,000, while nearly 50 p.c. ranged from $1,000 to $4,000. In the smaller urban centres moderately valued homes comprised even larger proportions, with 58 p.c. valued from $1,000 to $4,000 and less than 18 p.c. over $5,000. These facts clearly indicate that a large percentage of urban owned homes were occupied by families of very moderate income, particularly in the smaller cities.

Before proceeding further it might be well to point out that owners' estimates of value are characteristically optimistic. This view was borne out by a special investigation of home owners' shelter costs in 1931, a year when realty values along with prices generally suffered a considerable decline. In the investigation referred to, selling values reported by owners were, on the average, 6 p.c. above buying costs of the 473 homes for which data were collected. Estimated value appreciation was greatest in the low price homes and declined gradually in the higher buying cost groups. It is extremely doubtful if buying costs generally could have been realized in 1931. However, the possibility of moderate bias does not seriously affect the value of the data subsequently analysed, providing its presence is recognized.

The range of values for urban homes in cities of under 30,000 was much narrower and showed greater concentration around a single point than in larger centres. In every province the typical value for owned homes in the smaller cities was between $1,000 and $2,000 and the proportion of homes valued at more than $10,000 was never greater than 9·1 p.c., and seldom exceeded 3 p.c. In contrast to this, typical values in cities of over 30,000 ranged between $1,000 and $5,000 and provincial percentages of owned homes valued at more than $10,000 were scattered all the way from 3·9 to 21·2, with the majority being over 5.

Regional differences in the value distributions of owned homes in cities under and over 30,000 were quite distinct. New Brunswick was the only province in which proportions of homes in various value ranges were at all similar in the two groups. The typical value range in Saint John, the only New Brunswick city of over 30,000, was between $1,000 and $2,000, the same as for the group of smaller cities in this province. There was, however, an appreciably higher percentage of owned homes in Saint John valued above $5,000. The typical value in Halifax, Nova Scotia, occurred between $3,000 and $4,000, a range including 17·5 p.c. of the owned homes in that city. In Nova Scotia cities of less than 30,000 population the most typical value range was between $1,000 and $2,000, 25·4 p.c. of owned houses being in this group. The Quebec cities of over 30,000 included a higher proportion of relatively expensive owned homes than those of any other province. As noted in an earlier section, the wage-earner and average salaried classes in Quebec are predominantly tenants and in the majority of cases only the more well-to-do families own homes. Since these families occupy comparatively expensive dwellings, they raise the average value of owned houses in Quebec above that of other provinces. This is illustrated by the fact that 21·2 p.c. of owned homes in Quebec cities of over 30,000 were valued at $10,000 and over, while in Ontario with the next largest proportion and a larger actual number in this group, the corresponding percentage was only 10·5. Nevertheless, the most typical value in the larger Ontario cities was between $4,000 and $5,000, approximately $1,000 more than in Quebec. In the four Western Provinces the proportion of owned homes in cities of less than 30,000 was more highly concentrated between $1,000 and $2,000 than in Eastern Canada. The percentages were as follows: Manitoba 29·1, Saskatchewan 28·9, Alberta 30·2, and British Columbia 26·9. In cities of over 30,000, however, no such marked concentration existed. For Winnipeg, values of owned homes were distributed fairly symmetric-

ally around a point between $3,000 and $4,000, a range which included 19·3 p.c. of all owned homes in that city. In Saskatchewan the combined distribution for Regina and Saskatoon was less uniform. There was a slight tendency towards a concentration point between $1,000 and $2,000 and a second more pronounced grouping between $4,000 and $5,000. Of all owned homes in these cities, 12·7 p.c. fell in the first group and 15·2 p.c. in the second. The proportion valued at $5,000 and over was relatively high at 39·2 p.c. In Alberta cities of over 30,000 the combined distribution of Calgary and Edmonton centred in fairly normal proportions around the group of owned homes valued at between $3,000 and $4,000, which contained 18·6 p.c. of the total number. The distribution of Vancouver and Victoria values was very similar to that in British Columbia cities of less than 30,000, except that the most typical value was between $2,000 and $3,000, or about $1,000 higher than in the smaller cities. There were 23·8 p.c. of owned homes in Vancouver and Victoria valued at between $2,000 and $3,000. (See Part II, Tables 28 and 29.)

Although in many instances relatively high proportions of owned homes were associated with comparatively low average values, this condition was by no means general. Apparently the amount of income was a factor exerting a considerable influence upon the proportion of owners, although unfortunately this conclusion cannot be verified definitely from census data, since earnings figures are available only for wage-earners. Relationships between values of owned homes, proportion of homes owned and average earnings per wage-earner may be noted from the following statement.

PERCENTAGE OF TOTAL HOMES OWNED AND OF OWNED HOMES VALUED AT (A) UNDER $5,000, (B) $5,000-$10,000, WITH AVERAGE ANNUAL EARNINGS PER WAGE-EARNER, CITIES OF 30,000 POPULATION AND OVER, 1931

City	P.C. of Homes Owned	P.C. of Owned Homes Valued at—		Average Annual Earnings per Wage-Earner
		Under $5,000	$5,000-$10,000	
				$
Kitchener	56·6	56·9	38·2	961
London	55·4	70·6	24·4	1,201
Brantford	53·9	78·6	17·4	895
Saskatoon	53·5	64·5	31·2	1,141
Edmonton	53·0	82·0	15·3	1,097
Calgary	51·7	68·2	26·7	1,132
Vancouver	51·0	77·7	17·3	947
Regina	50·3	57·5	37·2	1,170
Hamilton	48·0	67·1	26·9	1,022
Winnipeg	47·0	64·4	28·2	1,120
Victoria	46·9	79·9	15·0	953
Toronto	46·5	42·6	44·4	1,227
Windsor	39·9	41·2	48·3	1,055
Ottawa	35·2	44·6	42·3	1,376
Halifax	35·2	61·1	29·7	1,090
Three Rivers	27·7	55·4	30·7	922
Quebec	25·3	44·2	32·2	1,032
Saint John	23·5	66·5	25·7	999
Montreal	14·9	48·5	29·1	1,017
Verdun	11·7	59·6	28·4	1,105

These figures reveal that ownership was most prevalent where the proportion of low cost homes was highest, although this correlation is far from perfect. The numerous exceptions to any generalization regarding ownership, home values and income emphasize the multiplicity of causes affecting these relationships. Kitchener, Ont., for example, with an exceptionally high proportion of owned homes had also a high proportion of relatively expensive homes and yet low average earnings per wage-earner, indicating that wage-earners formed a small fraction of owners in this city. In Saint John, N.B., and Halifax, N.S., owners were decidedly in the minority despite a high proportion of low-cost homes. Earnings were generally highest in the larger cities, with homes relatively expensive and ownership proportions below average. This was not true of Vancouver, however, where earnings were below average, while a high proportion of low cost homes was combined with a fairly high ownership ratio. The small proportion of owners in many of the larger Canadian cities is presumably more closely related to social custom and pressure of population with the accompanying inconvenience to suburban dwellers than to income deficiencies. The unsystematic nature of urban growth commented upon in an earlier

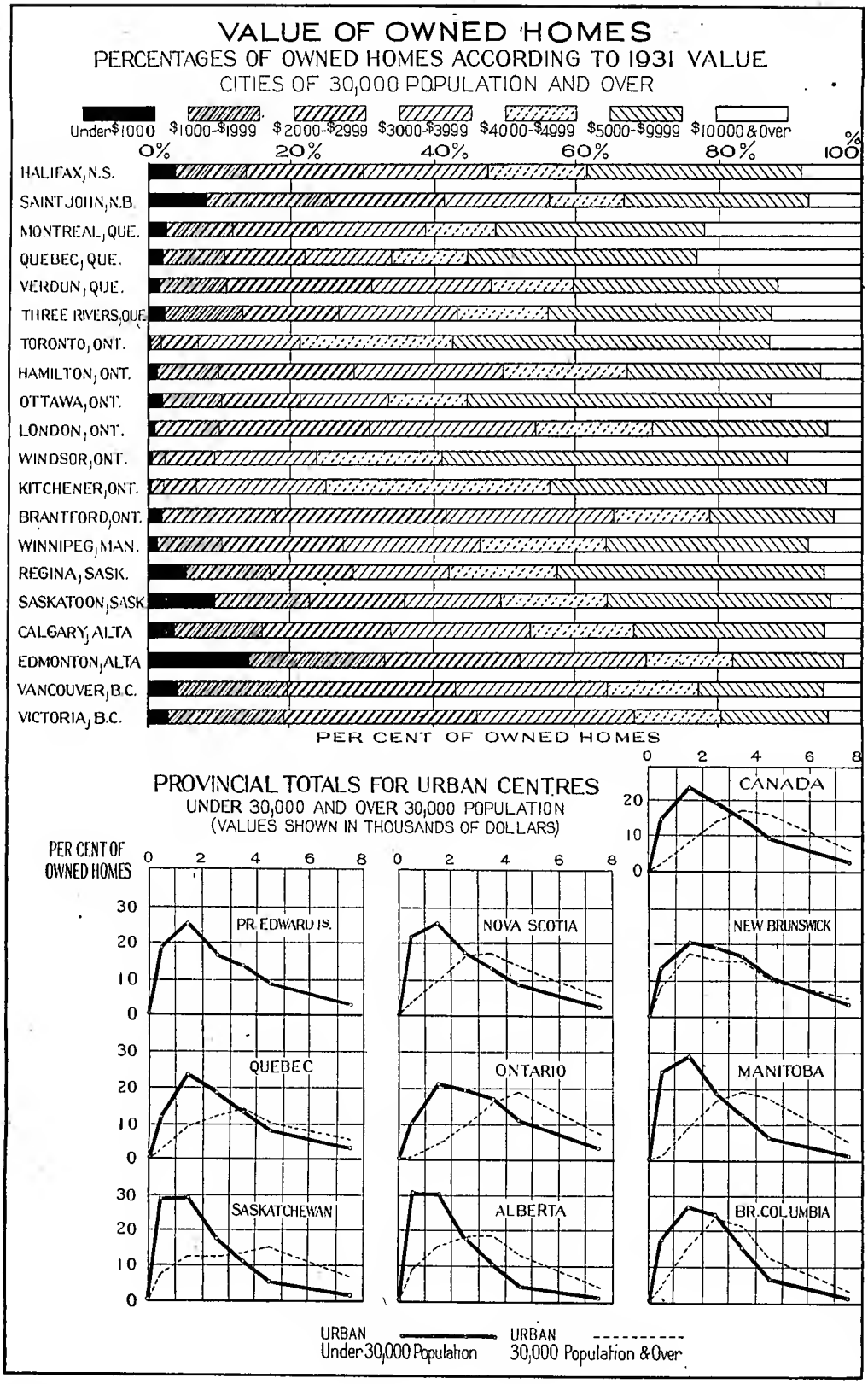


Chart 25

36755—34

chapter on historical development undoubtedly remains a further underlying cause tending to make a home unattractive as an investment. Inequitable assessments and high tax rates place ownership frequently in the category of an expensive luxury.

Values of Homes Owned by Family Heads in Different Occupational Groups.—As noted in an earlier section, the census housing facts relating to the occupations of family heads are cross-classified under five headings, *viz.*, employers, persons working on their own account, wage-earners, persons living on income and persons with no occupation or income. The value of homes owned by family heads in these groups differed materially. The most typical value, however, fell between $1,000 and $2,000 in all except the employer group, for which it was between $3,000 and $4,000. The proportion of homes worth more than $4,000 owned by employers approximated 61 p.c. which was considerably higher than for any of the other four occupational divisions.

Family heads working on their own account occupied homes which were valued, on the average, considerably lower than those for employers but higher than for heads in other groups. Of the houses in this section, 75 p.c. were estimated to be worth more than $2,000 and 34 p.c. were worth $5,000 or more. The concentration around a central point was most uniform for wage-earner heads. Nearly 53 p.c. of owned homes in this occupational group were valued at between $1,000 and $4,000, while only 24 p.c. were worth $5,000 or more. The distribution of value estimates for owned homes headed by persons living on income and those with no recognized occupation were very similar. They tended to concentrate to a greater extent in the lower value groups, over 18 p.c. in each case being placed between $1,000 and $2,000. The proportion valued at $5,000 or more was 29 p.c. for heads living on income and 26 p.c. for family heads with no recognized occupation. The latter include a considerable number of women mainly dependent upon other family members but still acting as head of the household. (See Part II, Table 30.)

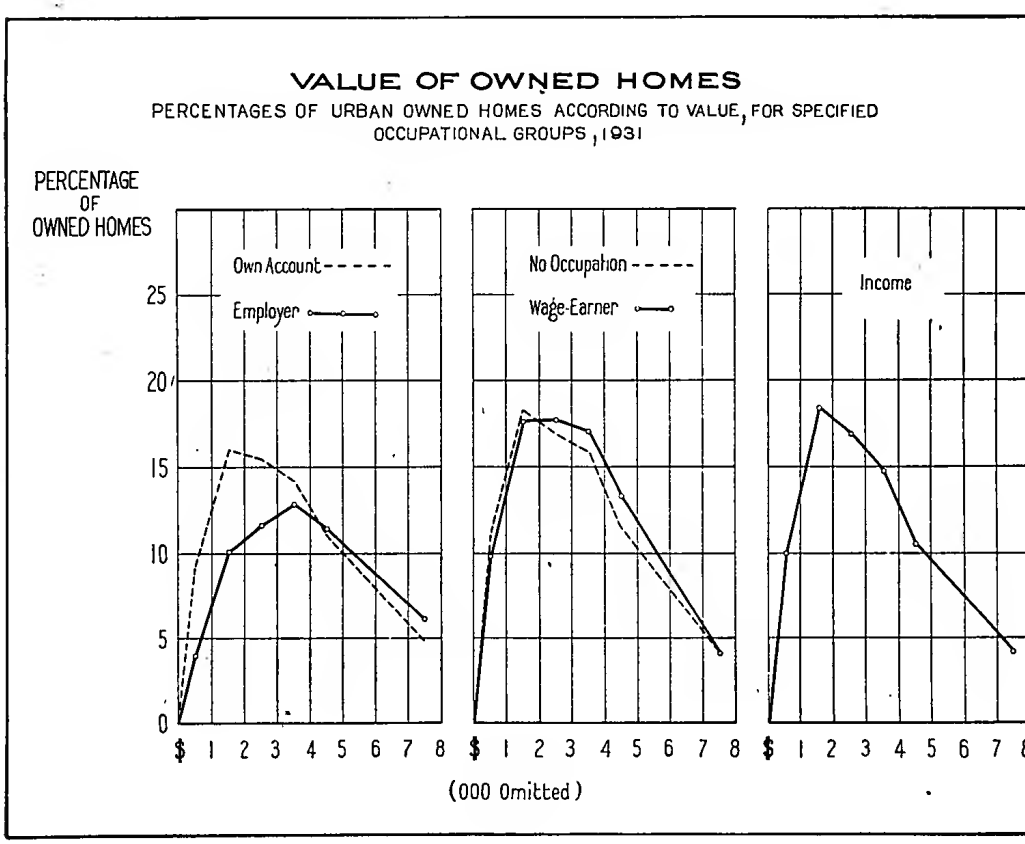


Chart 26

Relationships between Rentals of Tenants and Estimated Rental Values of Owned Homes.—The ensuing comparisons of actual rents with the estimated rental value of owned homes are only of an approximate nature. In the first place it has been necessary to decide what percentage of values represented a reasonable annual rental for owned homes and further to assume that this percentage actually would be realized. Annual rentals for owned homes have been estimated at 10 p.c. of the values placed upon the properties by owners at the time of the 1931 Census. This figure has been chosen after reference to two independent studies* and an investigation made by the Dominion Bureau of Statistics, in which annual rental value has been found to approximate 10 p.c. of original cost. The results of this investigation, outlined in another section of the chapter, showed an annual average cash outlay of $463 for 473 owned homes, the average buying cost of which was $4,174 and the estimated average selling value $4,430. This cash outlay figure, of course, does not take account of depreciation costs and loss of interest on capital invested in the home. It does include, however, $176 for interest and principal on mortgages. A rental, 10 p.c. of selling value, would appear to yield an adequate return on property free from any debt encumbrance but would probably be somewhat low if the property carried a mortgage. These facts indicate that any single percentage estimate must necessarily be arbitrary and approximate but a higher or lower rental percentage would not alter essentially the distribution of rental values of owned homes. A higher percentage would tend to throw the centre of distribution a little more towards higher rentals and, conversely, a lower percentage would result in a slightly greater concentration in lower rental groups. Another difficulty affecting the accuracy of estimated rental values of owned homes is the fact that values for homes of $5,000 and over have been reported for the 1931 Census only in two large groups, necessitating a less exact process of smoothing than was possible for other groups. Since, however, the majority of owned homes were worth less than $5,000, this fact does not essentially alter the contour of frequency distribution curves made from estimated rental values.

Comparisons have been made between actual rentals and estimated rental values for the total number of urban homes, for homes in urban centres of under 30,000 and for each city of over 30,000 population. This provides a fairly broad geographical representation of the Dominion. The degree of concentration around a central figure was much more pronounced for actual tenant rentals than for the estimated rental value of owned homes, which would indicate that home owners were scattered more uniformly than tenants over different income groups. In 1931, over 11 p.c. of owners lived in homes with a monthly rental value of less than $10, as compared with approximately 6 p.c. of tenants in this same class throughout all Canadian urban areas. This was due to the predominant influence of low value homes in the smaller urban areas and was not at all typical of larger centres. Approximately 10 p.c. of owned homes were included in each of the $5 rental groups between $10 and $35, *i.e.*, approximately 50 p.c. of the total. Actual monthly rentals paid by tenants, however, reached a well defined peak between $10 and $15, a range including over 17 p.c. of all urban rentals. Only 25 p.c. of urban tenants paid $35 or more per month. The proportion of estimated rentals for owned homes declined much less rapidly in the higher ranges, as indicated by the fact that 39 p.c. lived in homes with rental values of $35 or more. (See Part II, Table 31.)

As already intimated, there was less concentration of estimated rentals between $5 and $10 per month for cities of over 30,000 than appeared for the Dominion as a whole. The distribution of the estimated rental value of owned homes in the larger cities was fairly symmetrical, although a greater proportion of homes fell in the high rental groups than in the small ones. There was also less concentration around a single rental value for owned homes than for homes occupied by tenants. In Halifax, for instance, over 18 p.c. of tenants paid between $10 and $15 per month and percentages in subsequent groups declined sharply with only 1 p.c. paying between $55 and $60. For rental values of owned homes there was no such clearly marked concentration, the largest group of estimated rentals being from $20 to $25, which included less than 11 p.c. of all owned homes. In the group between $55 and $60 per month there was over 4 p.c. of owned homes as compared with 1 p.c. of rented homes.

* (1) A Report on Housing and Slum Clearance for Montreal, by a Joint Committee of the Montreal Board of Trade and City Improvement League—Pages 34 and 35.
(2) Home Ownership, Income and Types of Dwelling—The President's Conference on Home Building and Home Ownership, U.S.A.

In Quebec cities even greater differences were noted. Actual rentals were heavily concentrated between $15 and $25, a range which included between 40 p.c. and 50 p.c. of Quebec tenant homes, while the greatest concentration of estimated rentals for owned homes, *viz.*, from 15 p.c. to 19 p.c., fell between $25 and $35. The difference between the two series is even more clearly shown in the proportions of homes with rentals of over $60. These amounted to about 6 p.c. for rented homes, and 36 p.c. for owned homes. For Verdun and Three Rivers, however, which are composed predominantly of working-class families with moderate incomes, proportions in the $60 and over group were decidedly below provincial averages, being about 1 p.c. for rented homes and approximately 24 p.c. for owned homes.

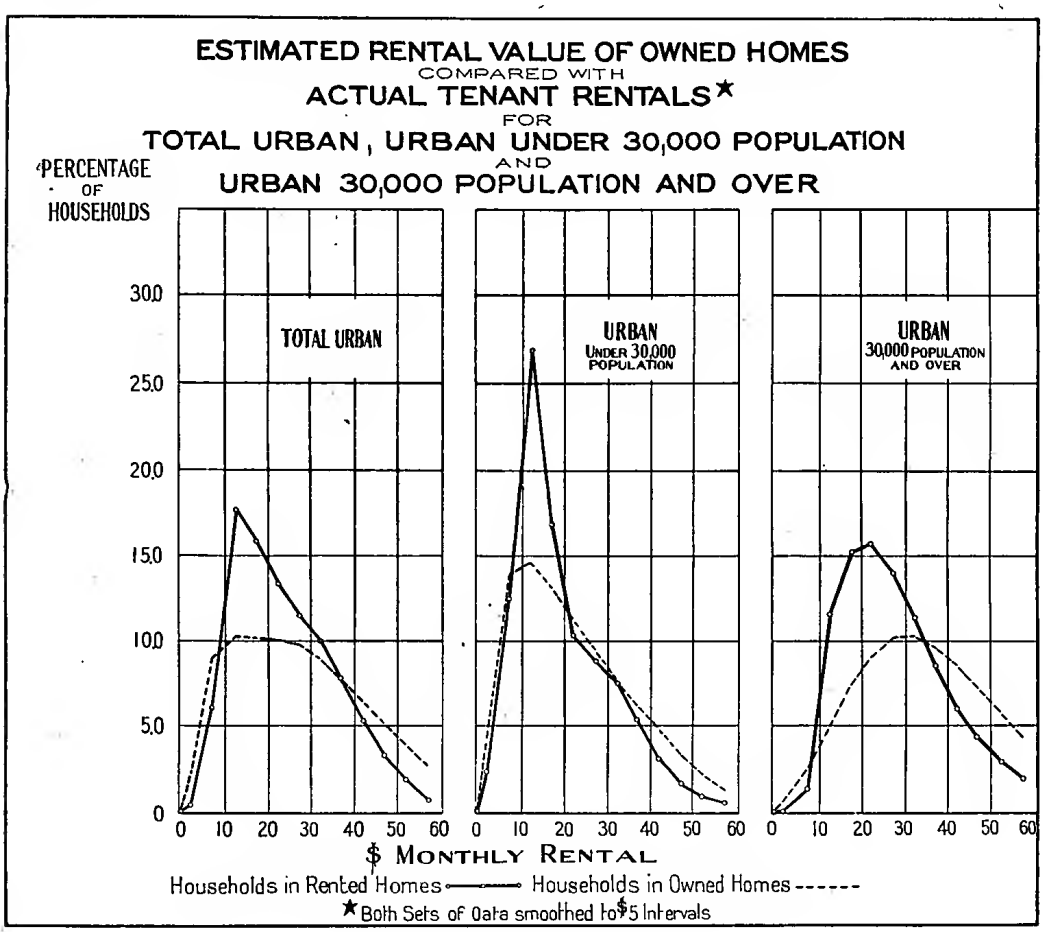
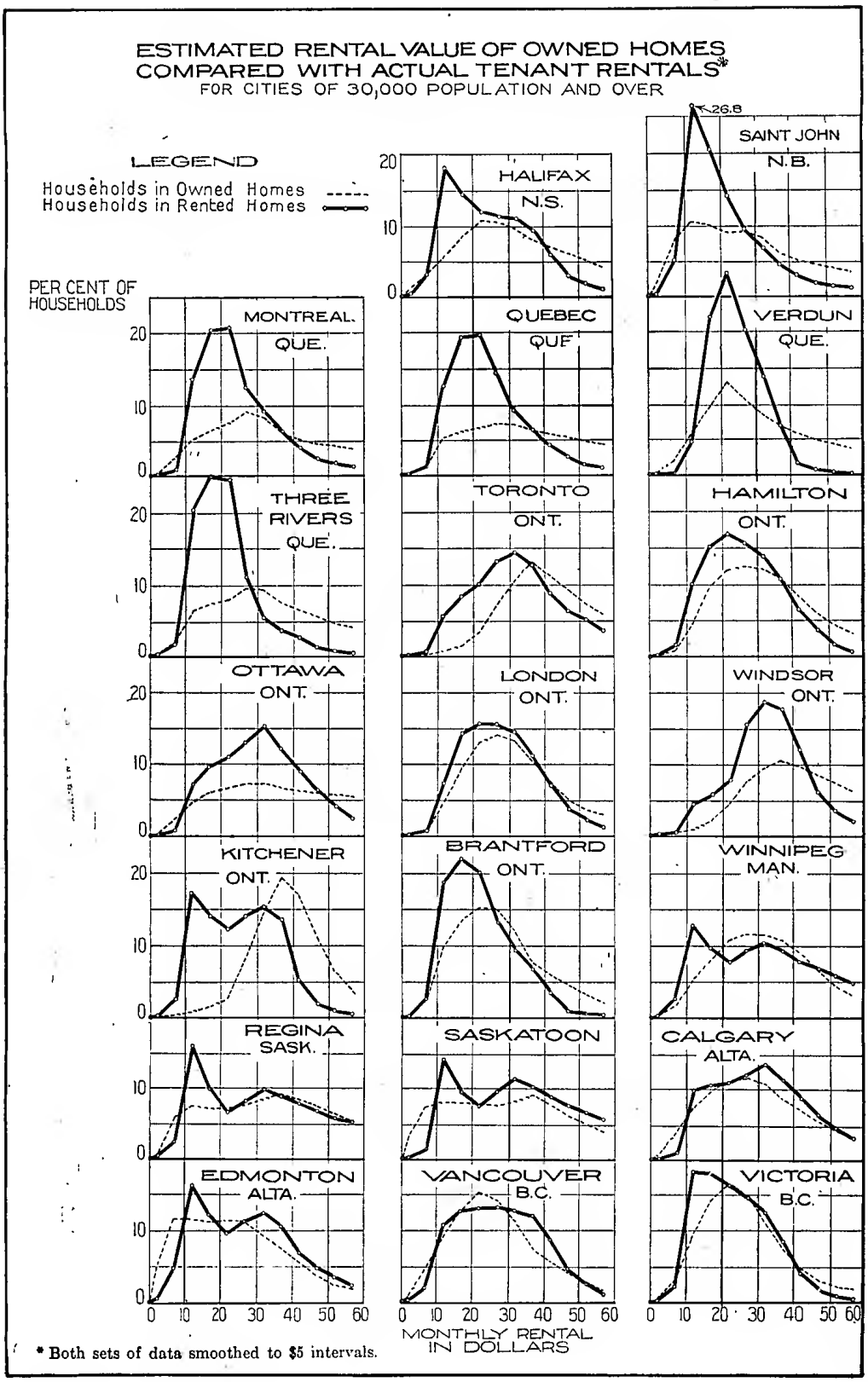


Chart 27

Ontario cities, with the exception of Ottawa, showed a greater degree of concentration around a central value for the estimated rent of owned homes than was common in Quebec and the Maritimes. The point of concentration was usually from $5 to $10 per month higher for estimated rentals of owned homes than for rented homes. For Ontario cities of over 30,000, the typical estimated rental value was highest in Toronto and lowest in Brantford. In Toronto the peak came between $35 and $40, a range which included 13 p.c. of the total, while for Brantford, one of the smaller cities, greatest concentration occurred between $20 and $25 per month, over 15 p.c. of owned homes falling in this group. Toronto's most typical tenant rental was between $30 and $35, a range including over 14 p.c. of all tenants, while the corresponding range for Brantford was from $15 to $20 and included nearly 22 p.c. of the total. The Ottawa distribution of estimated rentals for owned homes was unusually scattered as indicated by the fact that, for 34



* Both sets of data smoothed to $5 intervals.

Chart 28

p.c. of owned homes, estimated rental values were $60 or more per month. Actual rentals, however, were distributed fairly evenly around a central value between $30 and $35 with over 15 p.c. of all rented homes included in this range.

In the larger Western cities, there were several unusual features connected with rental distributions, related more particularly to actual rentals of tenant-occupied homes. Winnipeg rentals, for example, tended to fall into two groups, one centering between $10 and $15 and a second between $30 and $35. Nearly 13 p.c. of Winnipeg rentals fell in the first range and over 10 p.c. in the second. The same was true of Regina, although concentration in the lower group was more pronounced in that city. No such bi-modal distribution, however, occurred for estimated rentals of owned homes in these centres. Rental values in Winnipeg were distributed quite evenly around the range from $25 to $30, which contained nearly 12 p.c. of owned homes. The Regina distribution of estimated values of owned homes was less regular. It rose sharply in the rental groups up to $15, irregularly in the intermediate groups up to $40 and then declined gradually in the higher ranges. Over 17 p.c. of estimated rentals for owned homes in Regina exceeded $60. The explanation of bi-modal distributions in actual rentals in Winnipeg and Regina is not clear from census data. It is presumably associated, however, with relatively large numbers of inexpensive workmen's dwellings of the cottage or bungalow type. These are usually frame structures with modern plumbing, but without a cellar, seldom having more than five rooms, and being built mostly in outlying neighbourhoods. Their prevalence adds considerably to the proportion of low rental homes. With the exception of Edmonton, no bi-modal distributions were found in cities of the two most westerly provinces. Estimated rental values of owned homes in Edmonton were clustered at unusually low levels, approximately 11 p.c. falling within each of the $5 intervals between $5 and $30. In Vancouver, the unusual condition was found of a greater concentration of estimated rentals for owned homes than for rented homes, and in a slightly lower range. Over 15 p.c. of owned homes fell within the $20 to $25 group, while the greatest concentration of rented homes, a little over 13 p.c. of the total number, was within the range from $25 to $30.

The foregoing comparisons confirm the generally held belief that owners as a group occupy a better class of home than tenants do. The fact that distributions of estimated rentals for owned homes were usually symmetrical, however, indicates that ownership is not a phenomenon peculiarly associated with large incomes. It is evident that a considerable proportion of families with moderate incomes are included in the home-owner group. Rental distributions for tenants, however, conform more closely to those for income, *i.e.*, heavy concentration occurs in the lower groups, indicating that the proportion of tenants among families of low and moderate incomes is appreciably higher than the proportion of owners.

Analysis of Shelter Costs in Relation to Income and Buying Costs of Homes for 473 Civil Service Families.—The basic material employed in this analysis was collected for the year ending October 31, 1931, as part of a cost of living survey limited to families of the Dominion Civil Service. Although returns were received from all parts of Canada, those from the city of Ottawa formed a predominant proportion of the 473 utilized in making computations subsequently tabled. This fact, of course, limits the value of the material for purposes of general application, but it has been considered useful as an indication of relationships between income, purchase price and various items of current shelter costs. Separate averages have been obtained for four income groups ranging between $1,000 and $3,000, with $500 being used as the group unit. Only returns from families of 2, 3 and 4 persons have been utilized. (See Part II, Table 32.)

Salaries of the family head formed a smaller proportion of total income in the relatively high income groups than in the smaller ones. The average income of the group ranging from $2,500 to $2,999 was $2,720 as compared with an average salary of $2,469 for the family head, making a difference of $251. In the $1,000-$1,499 group, salaries of family heads averaged $1,322 with income only $44 higher at $1,366. Combined living expenses amounted to 104 p.c. of incomes in the lowest group and declined gradually to 95 p.c. in the highest. In all but the lowest group, home owners were able to meet current cash expenses from annual income.

The percentage of income paid out in the form of property taxes was approximately 6 p.c. in all four income groups, but the actual amounts increased from $83 in the lowest to $155 in the highest group.

Of the 473 homes, 284 were encumbered by mortgages and 57 more were being paid for upon instalment plans. The latter were confined mostly to the two lower income groups and annual average payments of this type ranged from $228 to $596. Mortgage interest was paid by 284 families but principal payments were made in only 190 cases. Annual average interest charges for the 284 families making payments ranged upward from $112 in the lowest to $216 in the highest income group, or from $64 to $150 averaged for all 473 families. Principal payments were larger than interest charges for the 190 families remitting but the reverse was true if the aggregate amounts were spread over all of 473 families. These figures then ranged from $43 in the lowest to $102 in the highest of the four income divisions. Combined interest and principal remittances for all families averaged 8·8 p.c. of their income, the percentages rising from 7·8 in the first to 9·3 in the fourth group.

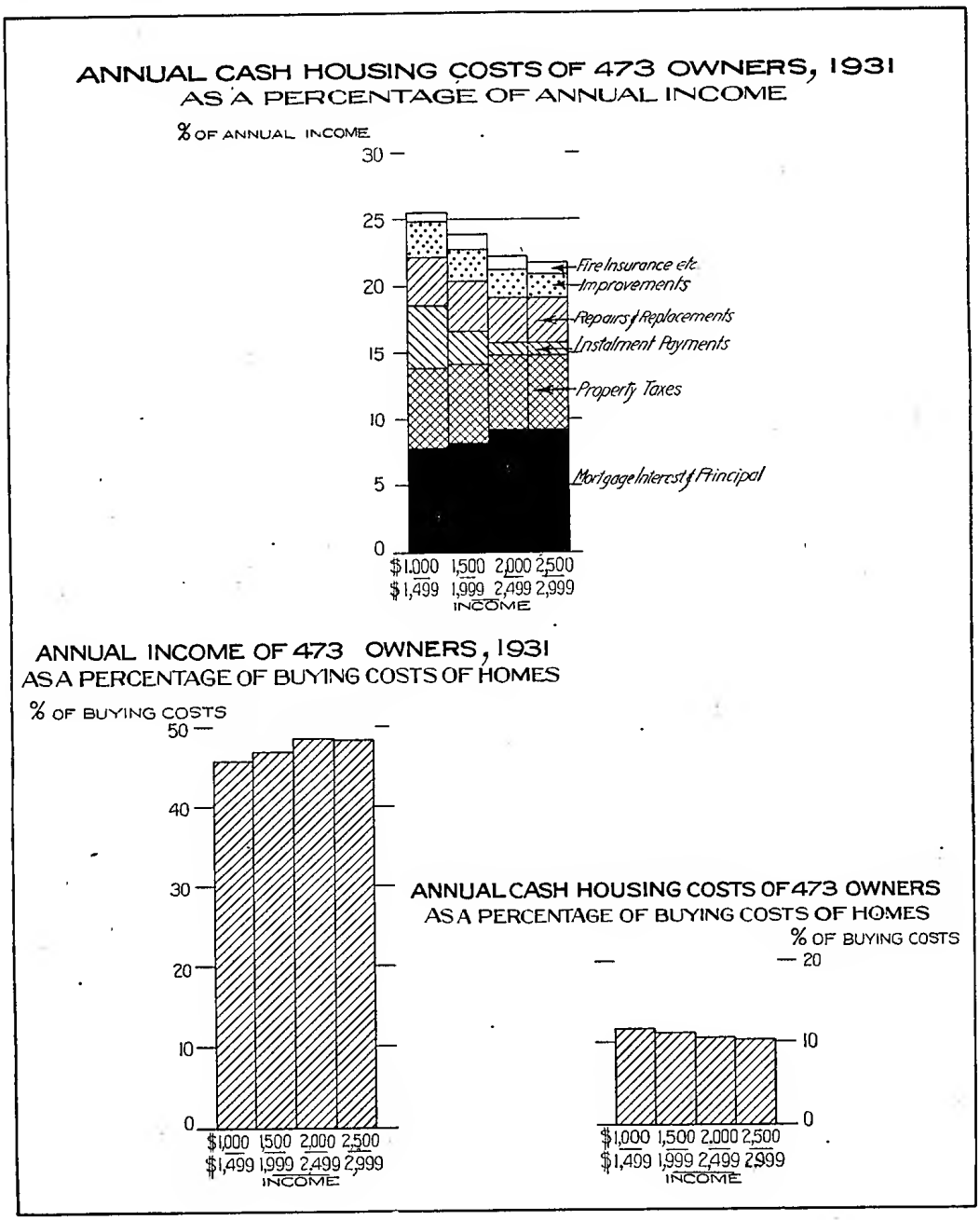


Chart 29

The total cash outlay for shelter, including taxes, interest and principal payments, improvements, repairs and other miscellaneous items, averaged $463 per home, or 23·1 p.c. of average income. This percentage tended to decrease as incomes increased, as indicated by percentages of 25·6 in the lowest and 21·9 in the highest income group. Corresponding actual cash outlays mounted almost proportionately to income from $349 to $597.

Cash outlay, however, does not represent the true cost of shelter for the family living in its own home. There is also depreciation and interest on investment to consider. In taking account of these items it was assumed that the ordinary investor in 1930-31 might reasonably expect a 5 p.c. return on his investment, *i.e.*, cash paid out in principal, interest and improvements. An allowance of 4 p.c. of the buying cost less cash outlays for repairs and replacement during the current year was made for depreciation. Considered on this basis, annual costs amounted to 35·7 p.c. of average income. The percentage declined from 39·2 in the lowest group to 33·1 in the highest, the corresponding dollar estimates being $536 and $900, respectively, or an average of $714. No attempt was made to take account of the subjective or "satisfaction" income derived from the privileges of ownership.

The average buying costs of homes for this group of 473 families was 208·6 p.c. or just a little more than double their annual income. Costs varied from 218·1 p.c. for the lowest to 205·3 p.c. of the highest income group but would have been slightly greater had not 11 of the 473 families inherited the houses in which they lived. The average buying cost of the 462 families which purchased their homes was approximately $100 more than the average reckoned for 473 families.

A second set of significant relationships has been obtained by relating buying cost to various items of current expenditure, cost of improvements, present (1931) equity and estimated selling value.

Property taxes formed an almost constant percentage of buying cost, which averaged 2·8 p.c. In different income groups, this figure ranged from 2·7 to 2·8, actual amounts advancing in successive income groups from $83 to $155. Mortgage payments of both principal and interest averaged 4·2 p.c. of buying costs, percentages rising from 3·6 in the lowest income group to 4·5 in the highest. The proportion of repairs and replacement varied little as between income groups and averaged 1·7 p.c. of buying cost. Since 4 p.c. had been decided upon as a fair allowance for depreciation in estimating actual annual shelter costs, this reduced the actual net depreciation allowance to 2·3 p.c. The 1931 cash outlay for current expenses averaged 11·1 p.c. of buying costs, the proportion falling from 11·7 p.c. in the lowest to 10·7 p.c. in the highest income group. When loss of interest on investment and depreciation was added, however, the annual cost for shelter amounted to 17·1 p.c. of buying costs and income group percentages ranged from 18·0 for the lowest to 16·1 for the highest.

The proportion of principal payments, *i.e.*, the value of the owners' equity, to buying costs was about three-fifths, and minor variations which occurred in this ratio showed little relation to the amount of income. The equity of families with incomes ranging from $1,000 to $1,499 averaged 62·8 p.c., while the corresponding figure for families with from $2,000 to $2,499 was 62·5 p.c., although in the highest group from $2,500 to $2,999, the percentage dropped to 58·7. The average equity for all of the 473 families was $2,559 but, in addition to this amount, an average of $487 per house had been spent upon improvements, distinct from ordinary upkeep of the property. Possibly it was such expenditures which influenced owners in almost invariably estimating the selling value of their properties to be above buying costs. The ratio of improvements to buying costs was highest in the low income groups just as were the ratios of estimated selling value to buying cost. There was no close relationship, however, between buying costs plus improvements and selling value estimates.

CHAPTER X

URBAN WAGE-EARNER FAMILY HOUSING, 1938

Introduction.—Since the completion of the main body of this monograph, results from a survey of wage-earner family living expenditures in 1937-38 have become available. This material includes valuable data concerning the qualitative aspects of urban housing and other topics considered in preceding chapters, *e.g.*, income and adequacy of accommodation, factors affecting tenure, and rent-income relationships.

Records were collected from 1,439 urban wage-earner families, 1,135 of British origin, 211 of French origin and 93 of other racial origin. The French sample was located in Montreal and Quebec City, Que., the mixed racial origin sample in Montreal, Que., and Winnipeg, Man., and the British sample included families in Charlottetown, P.E.I., Halifax, N.S., Saint John, N.B., Montreal, Que., Ottawa, Ont., Toronto, Ont., London, Ont., Winnipeg, Man., Saskatoon, Sask., Edmonton, Alta., and Vancouver, B.C. Families were selected on a random basis within the following limits: husband and wife were present in the home with one or more children; all families had been self-supporting in the survey year ended September 30, 1938, during which family earnings ranged from $450 to $2,500. Unfortunately, it is not possible to determine the exact proportion of the total number of urban households formed by families of this type. However, it is known that the earnings range includes the great majority of Canadian wage-earner families, probably 80 p.c. or more of them. Other sampling limitations excluded representation of households of one and two persons, multiple-family households, and one-family households where husband and wife did not live together as joint heads, *e.g.*, in which widows, widowers, etc., were family heads. The limitations regarding family composition were designed to exclude families which were not following the usual course of family life. Limited survey resources made it necessary to confine efforts to obtaining a satisfactory record of typical living expenditure patterns, and the above sampling limitations were established to achieve this result after careful reference to 1931 Census data.

CONVENIENCES OF OWNED AND RENTED DWELLINGS OF URBAN WAGE-EARNER FAMILIES

The limited size of the sample made it possible to consider under this heading only British owner and tenant families and French tenant families. The following statement of family distribution according to tenure and type of dwelling is not exactly parallel to census distributions but differences in proportions which occur appeared to be consistent with sampling limitations.

NUMERICAL AND PERCENTAGE DISTRIBUTION OF HOUSEHOLDS, BY TYPE OF DWELLING AND TENURE, 1938

Type of Dwelling	British Owner Families		British Tenant Families		French Tenant Families	
	No.	P.C.	No.	P.C.	No.	P.C.
All types	364	100·0	771	100·0	198	100·0
Single house	342	94·0	459	59·5	3	1·5
Duplex	15	4·1	80	10·4	41	20·7
Flat	2	0·5	124	16·1	128	64·7
Apartment	4	1·1	94	12·2	3	1·5
Row or terrace	1	0·3	14	1·8	23	11·6

Certain facilities were characteristic of all racial and tenure groups within the sample. It will be observed that percentages of homes with kitchen sink, inside flush toilet, running water, bathtub and electric lights never fell below 75 and seldom were less than 90. These conveniences were usual in the homes of families with annual earnings from $800 upward. However, wide differences between data for racial and tenure groups appeared in percentages of families with

refrigerators, garages and children's play space. Except for children's play space in the case of British owner families, these facilities were not typical within the earnings range covered, and regular domestic help was the exception rather than the rule.

Generally speaking, tenant homes were better equipped with conveniences than owner-occupied homes. Percentages of tenant homes with sinks, flush toilets, running water and refrigerators were higher than corresponding owner percentages, but the reverse was true for garages and children's play space. These differences appeared to be as closely related to types of dwellings as to tenure, *e.g.*, plumbing fixtures were more often missing from single houses than from apartments, flats and duplexes. On the other hand, garages and children's outside play space frequently accompanied single dwellings but were relatively rare in conjunction with apartments and flats. Heating arrangements were similarly related to types of dwellings. Single houses were usually heated by hot air furnaces, apartments by steam or hot water, and Quebec flats by stoves. Stoves were also the principal source of heat for a considerable number of tenant and owner families in single houses.

Differences in the prevalence of conveniences associated with tenure and types of dwellings may be observed from the three statements following.

HOUSING FACILITIES AND EQUIPMENT OF HOUSEHOLDS, BY TENURE, 1938 (FAMILIES REPORTING AS PERCENTAGE OF TOTAL IN TENURE GROUP)

Item	364 British Owner Families	771 British Tenant Families	198 French Tenant Families
	p.c.	p.c.	p.c.
Kitchen sink	93·7	96·9	100·0
Inside flush toilet	89·6	95·3	100·0
Inside running water	92·3	97·0	100·0
Bathtub	84·8	85·0	77·8
Refrigerator	52·2	55·9	80·8
Electric lights	99·5	99·2	100·0
Garage	52·3	37·5	8·6
Children's play space	87·1	69·0	22·7
Domestic help—regular	2·5	2·6	2·0

HOUSING FACILITIES AND EQUIPMENT OF (A) BRITISH TENANT FAMILIES AND (B) FRENCH TENANT FAMILIES, BY TYPE OF DWELLING, 1938 (FAMILIES REPORTING AS PERCENTAGE OF TOTAL IN GROUP)

Item	771 British Tenant[1] Families				198 French Tenant[1] Families		
	Single House (402 families)	Duplex (137 families)	Flat (124 families)	Apartment (94 families)	Duplex (41 families)	Flat (128 families)	Row or Terrace (23 families)
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Kitchen siak	95·5	99·3	99·2	95·7	100·0	100·0	100·0
Inside flush toilet	95·5	98·5	100·0	96·8	100·0	100·0	100·0
Inside running water	92·5	97·8	100·0	96·8	100·0	100·0	100·0
Bathtub	84·8	84·7	84·7	86·2	51·2	92·2	47·8
Refrigerator	47·8	67·2	64·5	61·7	61·0	89·8	65·2
Electric lights	99·3	98·5	100·0	98·9	100·0	100·0	100·0
Garage	48·5	38·0	16·9	20·2	14·6	7·0	4·3
Children's play space	84·8	63·5	51·0	37·2	24·4	17·2	47·8
Domestic help—regular	3·2	3·6	0·0	2·1	2·4	1·0	4·3

[1]Almost all British owner families resided in single houses; consequently this statement applies to tenant families only. A total of 14 British tenant families lived in rows or terraces, a type of dwelling containing three or more homes separated by partition walls from cellar to attic. Due to the small number of these families, a record of their housing facilities is not included in the statement. For the same reason 3 French tenant families living in single houses and an equal number residing in apartments have been omitted from the statement also.

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS, BY TYPE OF HEATING AND TENURE, 1938

Type of Heating	British Owner Families		British Tenant Families		French Tenant Families	
	No.	P.C.	No.	P.C.	No.	P.C.
All types	364	100·0	771	100·0	198	100·0
Stove	78	21·4	281	36·4	139	70·2
Hot air	257	70·6	391	50·7	52	26·3
Hot water	29	8·0	67	8·7	6	3·0
Steam	–	–	32	0·2	1	0·5

ADEQUACY OF ACCOMMODATION

Many factors appear inextricably involved in cause and effect relationships connected with adequacy of accommodation. Earnings, family preference, number of children, racial origin, type and size of dwellings, location, climate, building material resources and the limited nature of the housing market are some of the factors associated with this problem. However, subsequent comments will be limited to the bearing of earnings, family preference and number of children upon the adequacy of housing.

(a) **Earnings.**—In Chapter VI, Urban Earnings and Housing, it was shown that rooms per person increased at progressive family earnings levels. It has been observed, also, in the preceding section that the great majority of dwellings of wage-earner families were equipped with kitchen sink, running water, flush toilet, electric lights and bathtub, indicating that these qualitative factors may be considered generally as minimum requirements of urban dwellings. Their occurrence in the homes of self-supporting families appeared but slightly related to differences in income or other considerations affecting adequacy. There were some differences in the completeness with which these conveniences were installed in homes of families earning less than $1,600, but above that level they were found in practically all homes.

The relation between earnings and housing facilities was much more evident in records of conveniences which are associated with higher standards of housing, such as refrigerators, telephones and domestic help. At progressive family earnings levels, the proportion of families with these conveniences increased rapidly regardless of tenure, type of dwelling or racial origin of the family head. So also did the proportions of families with radios and motor cars, the latter in particular apparently being associated with higher levels of living. Children's play space, as has been noted, was more closely related to type of dwelling than to family earnings.

The foregoing data confirm an inference in Chapter VI from census data that differences in housing at progressive earnings levels are predominantly qualitative. At price levels existing at the time of the expenditure survey, the majority of families earning between $800 and $1,200 a year were able to secure homes with complete plumbing and electric lighting. Most families at this level also had radios, nearly half had refrigerators, less than 20 p.c. had automobiles and telephones and 28 p.c. owned their own homes. Families in this earnings range were of average size, tending to centre around four and five persons. By no means all of them occupied homes sufficiently large to provide one room per person, but there was little more crowding among normally constituted private families at this earnings level than where earnings were twice as high. British wage-earner families in the $800-$1,199 earnings range averaged 1·1 rooms per person as compared with 1·3 rooms per person in the family earnings range $2,000-$2,399.

There was a corresponding degree of stability at different earnings levels in average number of rooms per person used for sleeping accommodation, as may be observed from the following statement:—

ROOMS PER PERSON USED FOR SLEEPING PURPOSES, BY TENURE AND FAMILY EARNINGS, 1938

Item	All Families	$400-$799	$800-$1,199	$1,200-$1,599	$1,600-$1,999	$2,000-$2,399	$2,400-and over
British owners (364 families)...	0·59	0·56	0·55	0·57	0·60	0·60	0·60
British tenants (771 families)...	0·56	0·45	0·50	0·56	0·60	0·66	0·69
French tenants (198 families)...	0·45	0·45	0·45	0·46	0·45	0·44	0·40

(b) **Family Preference.**—This stability in number of rooms per person at different earnings levels suggests a second factor affecting the adequacy and quality of housing accommodation, *viz.*, family preference. Evidence of wide differences in expenditure preference can be observed from several groups of data. From the first statement in the previous section, it is apparent that some families combine the desire for their own home with ownership of automobiles and radios, presumably willing to sacrifice other conveniences such as refrigerators and bathtubs. The clearest evidence of preference, however, is that provided by a cross-classification of tenant-family rents and earnings. Within a range of $50 in annual rental, differences in family earnings of $1,000 were quite common. Of course, the question of preference is many-sided and the

HOUSING FACILITIES AND EQUIPMENT OF HOUSEHOLDS, BY FAMILY EARNINGS AND TENURE, 1938
(FAMILIES REPORTING AS PERCENTAGE OF TOTAL IN TENURE GROUP)

Item	British Owner Families Earning—				British Tenant Families Earning—				French Tenant Families Earning—			
	$800-$1,199 (89 families)	$1,200-$1,599 (151 families)	$1,600-$1,999 (74 families)	$2,000-$2,399 (31 families)	$800-$1,199 (234 families)	$1,200-$1,599 (299 families)	$1,600-$1,999 (112 families)	$2,000-$2,399 (60 families)	$400-$799 (27 families)	$800-$1,199 (68 families)	$1,200-$1,599 (58 families)	$1,600-$1,999 (32 families)
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Kitchen sink	85·4	94·7	98·6	100·0	95·7	97·7	98·2	100·0	100·0	100·0	100·0	100·0
Inside flush toilet	75·3	92·7	97·3	100·0	92·3	96·7	98·2	100·0	100·0	100·0	100·0	100·0
Inside running water	82·0	93·4	98·6	100·0	95·3	97·7	98·2	100·0	100·0	100·0	100·0	100·0
Bathtub	65·2	88·7	95·9	100·0	74·8	91·0	95·5	100·0	40·7	73·5	82·8	100·0
Refrigerator	40·4	49·7	58·1	74·2	45·7	55·9	67·0	88·3	48·1	80·9	86·2	96·9
Electric lighting	100·0	99·3	100·0	100·0	98·7	100·0	99·1	100·0	100·0	100·0	100·0	100·0
Garage	34·8	51·0	67·6	64·3	26·1	37·5	50·0	70·0	0·0	2·9	10·3	21·9
Children's play space	87·6	89·4	85·1	80·6	72·6	66·9	59·8	75·0	18·5	16·2	25·8	31·2
Telephone	23·6	41·7	75·7	80·6	14·1	37·8	59·8	71·7	3·7	10·3	24·1	56·2
Domestic help—regular	0·0	1·3	2·7	6·5	0·4	1·3	5·4	13·3	0·0	0·0	1·7	6·3
Radio	82·0	87·4	83·8	100·0	75·2	83·9	93·7	91·7	55·6	75·0	79·3	87·5
Automobile	23·6	43·0	54·0	54·8	17·5	33·4	33·9	56·7	7·4	1·5	8·6	2·8

selection of a home may be governed by other stronger considerations, such as place of occupation or varying desire for central or suburban living conditions. Within a given area the choice of homes is often narrow and differences in housing preference shown in the following scatter diagram undoubtedly would be less if the housing supply was more flexible.

FREQUENCY DISTRIBUTION OF 771 BRITISH TENANT HOUSEHOLDS ACCORDING TO INTERVALS OF FAMILY INCOME AND ANNUAL RENTAL, 1938

Family Income	Annual Rental									
	Under $150	$150-$199	$200-$249	$250-$299	$300-$349	$350-$399	$400-$449	$450-$499	$500-$549	$550 and over
$ 400-$ 599	2	4	-	-	-	-	-	-	-	-
600- 799	10	13	9	1	1	1	-	-	-	-
800- 999	14	35	22	4	7	-	1	-	-	-
1,000- 1,199	8	26	56	22	11	7	-	2	-	-
1,200- 1,399	5	22	47	40	41	14	4	1	-	-
1,400- 1,599	5	10	19	28	33	26	12	3	1	1
1,600- 1,799	1	1	6	11	24	13	9	3	1	-
1,800- 1,099	-	1	5	8	23	5	5	1	2	-
2,000- 2,199	-	1	2	4	7	9	14	3	1	1
2,200- 2,399	-	-	-	-	2	4	3	4	4	3
2,400 and over	-	-	-	2	5	5	7	-	1	2
Total	45	113	166	120	154	84	55	17	10	7
Average rent as p.c. of income	12·0	15·0	17·1	17·5	18·8	20·3	20·7	23·6	23·2	23·7

The influence of expenditure preference is also clearly apparent in percentages of total family expenditure upon the principal budget groups for two sets of families, one with income per person ranging from $100 to $199 and the other with income per person between $500 and $599. It will be observed that the percentage for housing increased slightly faster than the average of all expenditures between these two income levels.

PERCENTAGE DISTRIBUTION OF EXPENDITURE PER PERSON, BY TYPE OF EXPENDITURE, FOR HOUSEHOLDS IN THE INCOME GROUPS $100-$199 AND $500-$599 PER PERSON, 1938

Expenditure Group	Family Income per Person				P.C. Increase of Column 3 over Column 1
	$100-$199 (114 families)		$500-$599 (106 families)		
	Amount (1)	P.C. of Total (2)	Amount (3)	P.C. of Total (4)	(5)
	$		$		
Total	175	100·0	557	100·0	203
Food	67	40·9	126	25·4	88
Housing	32	19·5	107	21·6	235
Fuel and light	14	8·6	31	6·3	123
Clothing	16	10·0	55	11·0	232
Household operation	2	0·9	13	2·7	787
Furniture	7	4·4	32	6·6	356
Health	6	3·9	23	4·7	258
Personal care	3	1·7	8	1·6	204
Transportation[1]	4	2·7	43	8·8	898
Recreation	8	4·7	34	6·6	318
Education and vocation	2	1·1	6	1·2	265
Welfare and gifts	3	1·6	18	3·5	565

[1]Only 13 p.c. of families at the $100-$199 income per person level owned motor cars as compared with 52 p.c. of families with income per person of $500-$599. Between these two income levels, non-motor-car expenditure increased from $3 to $10 per person.

Number of Children per Family.—It is easy to demonstrate that the number of rooms per person tends to be inversely proportional to the number of children per family. This in turn is related to the fact that number of children and amount of family income do not increase together. Among survey records for British families, it was found that average income for those with five children was actually less than the corresponding average for families with one child. There was no significant difference between income averages for families with two, three and four children. In the sample of French families, income and number of children moved upward together but at very different rates, income lagging behind number of children.

In the British sample, one-child families averaged 1·5 rooms per person and a negligible proportion of families in this group had less than 1 room per person (5 out of 343). Room-per-person averages declined steadily to 0·8 for five-child families of which 38 out of 49 occupied less than one room per person. A comparable tendency was shown by records in the French sample, as may be observed from the two scatter diagrams following.

FREQUENCY DISTRIBUTION OF FAMILIES ACCORDING TO NUMBER OF CHILDREN AND NUMBER OF ROOMS PER DWELLING FOR (A) BRITISH FAMILIES OF THE SAMPLE AND (B) FRENCH FAMILIES OF THE SAMPLE, 1938

Rooms per Dwelling	Total British Families	British Families Having—					Total French Families	French Families Having—				
		1 Child	2 Children	3 Children	4 Children	5 Children		1 Child	2 Children	3 Children	4 Children	5 Children
1	–	–	–	–	–	–	–	–	–	–	–	–
2	7	5	1	1	–	–	–	–	–	–	–	–
3	53	24	17	8	2	2	20	12	5	2	–	1
4	270	114	92	48	12	4	75	22	15	20	9	9
5	362	114	122	80	32	14	45	5	12	12	7	9
6	326	66	127	76	39	18	52	6	5	12	11	18
7	84	16	15	23	22	8	17	1	–	3	4	9
8	28	4	8	6	7	3	2	–	1	–	–	1
9	4	–	–	2	2	–	–	–	–	–	–	–
10	1	–	–	1	–	–	–	–	–	–	–	–
11	–	–	–	–	–	–	–	–	–	–	–	–
Total	1,135	343	382	245	116	49	211	46	38	49	31	47
Average rooms per person	1·2	1·5	1·2	1·0	0·9	0·8	0·9	1·3	1·1	1·0	0·9	0·7

FACTORS AFFECTING TENURE

From survey data, it has been possible to examine relationships between tenure, age of the father and income. Age and income are themselves closely related so that it is difficult to appraise their comparative influence upon tenure. Number of children per family and certain attributes of families with and without automobiles also have been considered in relation to home tenure.

(a) **Age of the Father.**—When wage-earner family records were grouped according to the age of the father, it was found that the proportion of home-owners increased quite rapidly as the father's age increased. From 16·6 p.c. for the 10-year group in which fathers' ages centred around 30 years, the proportion of home-owners mounted steadily to 56·5 p.c. for the group in which fathers' ages centred around 60 years. Home ownership was more closely related to age than automobile ownership. The proportion of families owning cars at the lower age level was 27·7 p.c. It rose to 35·8 p.c. and 37·4 p.c., respectively, in the 40- and 50-year age groups but dropped back to 21·7 p.c. for the group in which fathers' ages centred around 60 years.

CHARACTERISTICS OF BRITISH HOUSEHOLDS IN RELATION TO AGE OF FATHER, 1938

Age of Father	Families	Average Annual Family Income	Children per Family	Rooms per Person	P.C. of Families in Owned Homes	P.C. of Families with Motor Cars
		$				
Total[1]	1,135	1,443	2·3	1·2	32·0	23·3
25-34 years	307	1,319	1·9	1·2	16·6	27·7
35-44 "	472	1,471	2·4	1·2	31·4	35·8
45-54 "	294	1,541	2·5	1·2	46·3	37·4
55-64 "	46	1,451	2·3	1·3	56·5	21·7

[1] Thirteen families with father less than 25 years of age and three with father over 64 years of age.

(b) **Family Income.**—From the above statement it may be observed that family income and proportions of owner-occupied homes increased in the first three age groups. In the fourth and highest, however, proportions of owned homes increased while average family income declined.

This indicated that age may have an influence upon tenure which is partially independent of income. However, a decline in income within this age range may not result in any reduction of amounts available for shelter. There are fewer children living at home as dependents and the home does not require so much maintenance expenditure as when the family is passing through earlier stages.

These same records may be examined below in relation to income per family. The tendency for proportions of owners to increase at higher income groups is quite clear, but the group income ranges of $200 for British families and $400 for French families are too small to show consistent differences in ownership preference. This suggests that a substantial change in income levels may be necessary before many families decide to change their tenure status. A great many others presumably will not be led to change their status regardless of substantial income increases.

CHARACTERISTICS OF (A) BRITISH HOUSEHOLDS AND (B) FRENCH HOUSEHOLDS AT PROGRESSIVE LEVELS OF FAMILY INCOME, 1938

Family Income	Families	Persons per Family	Children per Family	Average Age of Father	Rooms per Person	P.C. of Families in Owned Homes	P.C. of Families with Motor Cars
				years			
Total (British families)	1,135	4·4	2·3	41	1·2	32·0	33·2
$ 400-$ 799	45	4·5	2·4	36	1·0	8·9	4·4
800- 999	108	4·3	2·2	39	1·1	23·1	24·1
1,000- 1,199	184	4·4	2·3	39	1·1	28·3	13·0
1,200- 1,399	236	4·3	2·2	40	1·1	25·8	32·2
1,400- 1,599	212	4·3	2·2	42	1·2	34·9	38·2
1,600- 1,799	118	4·3	2·2	41	1·3	41·5	42·4
1,800- 1,999	91	4·6	2·4	42	1·2	45·1	41·8
2,000- 2,399	100	4·7	2·4	44	1·3	38·0	55·0
2,400 and over	41	4·6	2·4	42	1·3	46·3	63·4
Total (French families)	211	5·3	3·2	39	0·9	6·2	10·0
$ 400-$ 799	27	4·2	2·1	35	0·9	3·7	7·4
800- 1,199	62	4·9	2·8	35	0·9	–	–
1,200- 1,599	68	5·1	2·9	40	0·9	8·8	11·8
1,600- 1,999	34	6·6	4·4	41	0·8	11·8	23·5
2,000 and over	20	6·9	4·9	48	0·9	10·0	15·0

(c) **Number of Children per Family.**—Survey data support the conclusion reached in Chapter VII on tenure that number of children in the family bear very little relationship to the proportion of owner-occupied homes. In the British sample the proportion of families living in owned homes declined very slightly from 32·4 p.c. of one-child families to 30·6 p.c. of those with five children. Proportions of French owner families were small, never exceeding 10·5 p.c. in any of the family groups with from one to five children and showing no trend relationship to number of children.

CHARACTERISTICS OF (A) BRITISH HOUSEHOLDS AND (B) FRENCH HOUSEHOLDS IN RELATION TO NUMBER OF CHILDREN PER FAMILY, 1938

Children in Family	Families	Average Family Income	Average Age of Father	Rooms per Person	P.C. of Families in Owned Homes	P.C. of Families with Motor Cars
		$	years			
Total (British families)	1,135	1,443	41	1·2	32·0	33·3
1 child	343	1,392	39	1·5	32·4	36·4
2 children	382	1,484	40	1·2	32·5	36·1
3 "	245	1,446	42	1·0	31·4	30·6
4 "	116	1,482	43	0·9	31·0	25·9
5 "	49	1,377	44	0·8	30·6	20·4
Total (French families)	211	1,316	39	0·9	6·2	10·0
1 child	46	1,075	36	1·3	4·3	10·1
2 children	38	1,165	34	1·1	10·5	13·2
3 "	49	1,311	39	1·0	4·1	12·2
4 "	31	1,496	46	0·9	3·2	6·5
5 "	47	1,560	42	0·7	8·5	6·4

(d) **Ownership of Motor Cars.**—The motor ear is often blamed for deelining family interest in the home, but it is doubtful if the gradual shift in status from ownership to tenaney ean be attributed in any eonsiderable measure to this eause. In the British sample of 1,135 families, the proportion of home owners with cars was greater than the corresponding proportion of tenants with ears, *i.e.*, 45 p.c. and 29 p.e., respectively. Differences in proportions appeared more directly related to income than to any other observable eause, although the proportion of home owners doubtless would be higher if no motor cars were available. The avcrage income of families having autos and living in their own homes was higher than a eorresponding average for tenant families with autos, and both averages were above those for owner and tenant family groups without cars. Of the two latter, the home-owner family income avcrage was the larger. This may be noted from the statement following whieh also shows that non-ear-owning families had, on the average, a slightly larger number of children than car-owning families. Tenant families with no car had a larger average number of ehildren than home owncrs without ears, but home owners with cars had slightly larger families than tenant families with cars.

CHARACTERISTICS OF BRITISH HOUSEHOLDS, BY OWNERSHIP OF CARS AND TENURE, 1938

Item	Car Owners		Non-Car Owncrs	
	Owners	Tenants	Owncrs	Tenants
Number of families	154	224	210	547
Children per family	2·2	2·1	2·3	2·4
Age of father.....years	43	39	44	39
Rooms per household	5·4	5·3	5·2	5·1
Rooms per person	1·3	1·2	1·2	1·1
Average income..... $	1,662	1,596	1,470	1,309
Shelter costs..... $	313	305	287	268
Fuel costs..... $	112	101	108	95

The distribution of incomes within these four family groups is also of interest. Incomcs in tenant groups showed a more pronounced tendency to eentre around a typieal amount than was the case for home-owner families. Both ear-owning groups showed approximately 20 p.c. of families with income of more than $2,000 while corresponding proportions of families without cars approximated 8 p.e. Almost 90 p.c. of car-owning families had annual ineomes of $1,200 or more.

NUMERICAL DISTRIBUTION OF BRITISH HOUSEHOLDS, BY OWNERSHIP OF CARS AND FAMILY INCOME, 1938

Family Income	Car Owners		Non-Car Owners	
	Owners	Tenants	Owncrs	Tenants
Total	154	224	210	547
$ 400-$ 599	–	–	–	6
600- 799	1	1	3	34
800- 999	7	19	18	64
1,000- 1,199	11	13	41	119
1,200- 1,399	26	50	36	124
1,400- 1,599	33	48	41	90
1,600- 1,799	21	29	28	40
1,800- 1,999	22	16	19	34
2,000- 2,199	15	23	9	19
2,200- 2,399	6	11	8	9
2,400 and over	12	14	7	8

RENT IN RELATION TO FAMILY EARNINGS AND INCOME

Data on rents have been used to advantage in the section on adequaey of aecommodation as evidence of a marked diversity in wage-earner family housing preferences. Within narrow income limits a wide range of annual rentals was found. The same data are used in the present section to illustrate the operation of Engel's law and also the converse statement, *i.e.*, not only does the proportion of income devoted to rent tend to fall as income riscs, but rent-income ratios tend to rise at sueeessively higher rental levels.* Other uses made of rental data in this section

* This relationship was obscured in census records prior to 1936 by the use of unequal rent intervals in the cross-classification.

include an examination of rents at comparatively low earnings levels to observe variations in basic rent levels for self-supporting wage-earner families in different cities. Tests were made also to see what evidence there was of a minimum standard of housing amenities at these earnings levels. For certain purposes all family income was used as a basis of comparison but for others it was possible to employ family earnings only.

Annual Rent in Relation to Family Income.—The following statement, based on records from 771 British tenant wage-earner families, shows ratios of rent to income when these data are classified, first, according to income groups and then according to rent groups.

RATIO OF RENT TO INCOME AT SUCCESSIVE LEVELS OF (A) FAMILY INCOME PER PERSON AND (B) ANNUAL RENT PER FAMILY, 1938

Family Income per Person	Family Rent-Income Ratios[1]	Annual Rent per Family	Family Rent-Income Ratios
$100-$199	19·4	Under $150	12·0
200- 299	18·5	$150-$199	15·0
300- 399	18·4	200- 249	17·1
400- 499	18·0	250- 299	17·5
500- 599	18·6	300- 349	18·8
600 and over	15·9	350- 399	20·3
		400- 449	20·7
		450- 499	23·6
		500- 549	23·2
		550 and over	23·7

[1] The apparent conflict between trends in shelter-income ratios of this statement and those of page 533 is due to different proportions of owners at the two income levels shown in the latter.

This statement provides further evidence of diversity in the matter of housing standards, otherwise there would not be such divergent trends as shown above. An increase in tenant family income tends to be accompanied by a less than proportionate increase in rent but, as shown in the statement on page 533, within successive ranges of family income there is no uniformity of rents and the higher the family income the greater is the range of rents being paid. Re-computation of rent-income ratio averages according to rent intervals, reflects this tendency of some families at each rent interval to stress housing more than other budget requirements and average rent-income ratios increase steadily at progressive rent levels.

Wage-Earner Family Rents at Low Earnings Levels.—Although average rents paid by wage-earner families within narrow earnings limits do not give an exact basis for measuring variations in housing standards from city to city, they do give a very good means of determining whether city rent levels may be called "high" or "low" in relation to other urban areas. Further, by measuring the difference between rent averages at successive family earnings levels, a clue may be obtained to the relative degree of homogeneity in wage-earner family housing standards as between cities.

Considering, first, basic levels of rents, the most noticeable fact was that the level of rents at low earnings levels bore no consistent relationship to regions or the size of the city. In the family earnings range $800-$1,199 city average rents were scattered all the way from $169 a year for Saint John to $299 for Ottawa. Arranged in order of magnitude, city averages were as follows:—

Saint John, N.B.	$169	Halifax, N.S.	$213
Charlottetown, P.E.I.	177	Winnipeg, Man.	226
Montreal, Que. (French)	194	Vancouver, B.C.	226
Edmonton, Alta.	197	London, Ont.	242
Saskatoon, Sask.	200	Toronto, Ont.	246
Montreal, Que. (British)	201	Ottawa, Ont.	299
Quebec, Que.	209		

It is improbable that inclusive city averages would maintain the same ranking, however, for there were wide differences in the spread between average family rents between the $800-$1,199 and the $1,200-$1,599 family earnings groups. Survey data were insufficient to carry comparisons into higher earnings ranges. Quebec City which ranked sixth on the preceding list showed an

increase of only $17 a year between the two earnings groups mentioned while, on the other extreme, corresponding Halifax family rent averages differed by $100 a year. A second ranking according to differences in average annual rents between the $800-$1,199 and $1,200-$1,599 family earnings groups produced the following arrangement:—

Quebec, Que.	$ 17	Ottawa, Ont.	$ 53
Montreal, Que. (French)	23	Charlottetown, P.E.I.	67
London, Ont.	24	Toronto, Ont.	69
Vancouver, B.C.	26	Edmonton, Alta.	71
Montreal, Que. (British)	30	Saint John, N.B.	87
Saskatoon, Sask.	36	Halifax, N.S.	100
Winnipeg, Man.	45		

This set of differences confirms data presented in the preceding section showing that increases in average rent did not keep pace with successive advances in income levels. It also points to a considerable degree of homogeneity in the housing standards of French wage-earner tenant families and to a lesser extent of the tenant families in cities of Western Canada. The widest differences in housing levels apparently occur in Maritime cities.

Characteristics of Families and Housing Amenities at Low Rent Levels.—Records for a group of 45 families with annual rentals not exceeding $149 were examined for data on housing amenities at low rent levels. They were further divided according to family income per person, 22 families reporting between $100 and $199, and 23 between $200 and $299 of annual income per person. The survey's random selection of self-supporting families produced only four or five cases in twelve cities where family income per person fell below $100, and about the same number where annual rent per family was less than $100. The 22 families with annual rent under $150 and annual income per person less than $200, therefore, may be taken to represent minimum standards of self-support in urban areas.* These were concentrated mainly in the Maritimes, while at the higher income level the majority lived in Western cities and the remainder in the Maritimes. There was not a significant proportion of either income group at this rent level in the five Ontario and Quebec cities surveyed. Apparently minimum rentals for self-supporting families in cities of these provinces tended to be higher than in the Maritimes and Western Canada, but it does not follow that average rentals were necessarily higher also.

Appreciable differences in the characteristics of the two family income groups are apparent from the following statement:—

CHARACTERISTICS OF HOUSEHOLDS PAYING ANNUAL RENT OF LESS THAN $150 IN THE INCOME GROUPS $100-$199 AND $200-$299 PER PERSON, 1938

Item	Family Income per Person	
	$100-$199	$200-$299
Number of persons	5·6	4·1
Children under 18 years of age	3·4	2·0
Age of father ..... years	38	35
Total income ..... $	822	1,026
Rooms per dwelling	4·7	5·0
Rooms for sleeping purposes	2·2	2·3
Average annual rent ..... $	128	130
Merchandise credit outstanding ..... $	63	46
Recreation expenditure ..... $	36	73
Gross savings ..... $	43	73

Families in the $100-$199 income-per-person group tended to be larger than wage-earner families generally and had more children under 18 years of age. The $200-$299 group with smaller families lived in larger dwellings, although they paid almost the same rent. This is probably related to regional differences in housing equipment as it will be shown that the plumbing of the lower income group was more complete than for the higher group. This suggests that an adequate examination of minimum standards must include a more complete representation of cities, and that recognized minimum standards will be found to differ from city to city and region to region, depending probably upon size, age and location and to some extent upon the

* Six of the 22 families in this group lived in Charlottetown, the population of which was given as 12,361 by the 1931 Census.

racial background of the population. For the families with income per person of $100-$199, average amounts of credit outstanding exceeded gross savings averages, indicating that even in low rent areas annual income of this amount was insufficient to balance the family budget.

Differences in the proportion of dwellings with the commoner kinds of housing conveniences may be noted from the following statement:—

HOUSING FACILITIES AND EQUIPMENT OF HOUSEHOLDS PAYING ANNUAL RENT OF LESS THAN $150 IN THE INCOME GROUPS $100-$199 AND $200-$299 PER PERSON, 1938 (FAMILIES REPORTING AS PERCENTAGE OF TOTAL IN INCOME GROUP)

Item	Family Income per Person	
	$100-$199	$200-$299
	p.c.	p.c.
Kitchen sink	96	83
Inside flush toilet	86	74
Inside running water	100	83
Bathtub	46	52
Refrigerator	14	26
Electric light	91	100
Telephone	5	9
Radio	68	87

A kitchen sink, running water, inside flush toilet and electric lights apparently are typical of even these very low rent levels. The paradox of a more complete installation of these items at the lower income level is apparently associated with a high proportion of $200-$299-per-person-income families occupying single houses in Western cities. Low grade single houses are characteristically less completely equipped with plumbing than flats, duplexes and apartments leased at comparable rent levels. Bathtubs, while fairly common, cannot be considered typical of dwellings renting below $150 per annum and refrigerators are the exception rather than the rule. It is of interest that the majority of these families had radios, while very few had telephones.

CHAPTER XI

THE HOUSING OF RELIEF FAMILIES, 1936

Families in receipt of relief were distinguished from self-supporting families for the first time in the 1936 Census of the Prairie Provinces. The facts collected were the same for both types of family, making possible a comparative appraisal of several aspects of relief and non-relief housing conditions. After certain limitations had been established, a random sample of approximately 3,000 cases was selected for this purpose from the five Prairie cities of 30,000 population and over. The selection was made within the same limits used in sampling non-relief families for the study of earnings and housing in Chapter VI. It included only wage-earner households with husband and wife living together in self-contained living quarters. Households in which lodgers exceeded the number of persons in the private family were excluded. It is of note that this random selection of relief families included one-fifth as many owner families as tenant families. There were 10,826 married wage-earners on relief in Prairie cities of 30,000 population and over at the time of the 1936 Census. If one-fifth of these were home-owners, it is apparent that economic circumstances were changing the urban tenure structure and, undoubtedly, had contributed to a reduction in the proportion of owned homes between 1931 and 1936.

RANDOM SAMPLE OF RELIEF HOUSEHOLDS, BY TENURE, 1936

City	Owners	Tenants
Total	498	2,425
Winnipeg	78	518
Regina	94	417
Saskatoon	159	453
Calgary	64	536
Edmonton	103	501

Size of Relief Families in Relation to City Average Number of Persons per Family.—As might be expected, families in receipt of relief were larger than average, the difference being slightly more marked for tenant than for home-owning families. Average numbers of persons per relief family of the type described above were compared with 1936 averages for a random selection from all wage-earner families of the same type. This comparison is shown in the statement following.

AVERAGE NUMBER OF PERSONS PER RELIEF TENANT HOUSEHOLD COMPARED WITH CITY AVERAGES FOR ALL TENANT HOUSEHOLDS,[1] 1936

City	Average Number of Persons per Household			
	Relief Tenants	All Tenants	Relief Owners	All Owners
Winnipeg	4·4	3·9	4·7	4·3
Regina	4·8	4·0	4·9	4·3
Saskatoon	4·9	4·0	4·8	4·3
Calgary	4·2	3·8	4·2	4·0
Edmonton	4·7	4·0	4·7	4·1

[1] The same tenant family groups as shown in the final statement of Chapter VI.

It would be erroneous to infer from these data, however, that relief is a phenomenon especially associated with large families. The next statement shows how closely the distribution of Winnipeg relief households sampled in 1936 according to the number of persons per household compares with a corresponding distribution for all wage-earner households with two or more persons in 1931.

PERCENTAGE DISTRIBUTION OF RELIEF HOUSEHOLDS, BY NUMBER OF PERSONS PER HOUSEHOLD, WINNIPEG, 1936, COMPARED WITH THAT OF ALL FAMILIES, WINNIPEG, 1931

Persons per Household	Winnipeg	
	1931, All Families (46,411)	1936, Relief Families (596)
Total	100·0	100·0
2	17·4	11·1
3	20·7	24·8
4	20·2	23·5
5	15·7	18·8
6	10·6	10·4
7	6·4	4·7
8	3·8	3·5
9	2·2	1·3
10	1·3	1·0
11	0·8	0·7
12 and over	0·9	0·2

There is a greater concentration of relief families in the 3-, 4- and 5-person households, but above that number proportions of relief families in 1936 were actually a little smaller than corresponding proportions of all families in 1931.

The larger average size of relief families in 1936 noted in the first statement was not due to the presence of lodgers. There was only one lodger to every 17 owner households on relief and one to every 10 tenant relief households. Corresponding ratios resulting from a general sample of wage-earner families in 1936 showed one lodger to every 8 owner families and one to every 8 tenant homes also. Relief families within the sampling limits noted, therefore, were mostly comprised of 3, 4 and 5 persons without lodgers.

Evidence of Crowding Among Relief Tenant Families.—There was a marked parallel in number of rooms per person for tenant relief families in 1936 and for families with annual earnings of less than $400. It is reasonable to presume that few families with earnings of less than $400 could exist without assistance. Very few self-supporting wage-earner families with children were found below the $800 earnings level in the Bureau's 1938 survey of family living expenditures. It appears significant, however, that a sudden rise occurred in average numbers of rooms per person between the under $400 and $400-$799 family earnings groups. The rise in average numbers of rooms per person was much less rapid after the $800 family earnings level had been passed. This may be observed below.

AVERAGE NUMBER OF ROOMS PER PERSON FOR RELIEF FAMILIES COMPARED WITH THAT FOR TENANT FAMILIES AT LOW EARNINGS LEVELS, 1936

City	Average Number of Rooms per Person			
	Tenant Relief Families	Tenant Families with Earnings of—		
		Under $400	$400-$799	$800-$1,199
Winnipeg	0·87	0·89	1·05	1·08
Regina	0·82	0·83	1·07	0·96
Saskatoon	0·91	0·97	1·05	1·15
Calgary	0·79	0·80	1·03	1·12
Edmonton	0·75	0·76	0·99	1·07

Data for samples of relief families have been arranged to show the proportion of persons on relief according to numbers of rooms per person. The statement following shows that from 55 to 70 p.c. of persons on relief lived in homes providing less than one room per person (which has been taken arbitrarily to indicate an adequate supply of housing space).

PERCENTAGE DISTRIBUTION OF PERSONS ON RELIEF, BY NUMBER OF ROOMS PER PERSON, 1936

Rooms per Person	Winnipeg (2,238 persons)	Regina (1,988 persons)	Saskatoon (2,213 persons)	Calgary (2,236 persons)	Edmonton (2,332 persons)
Total	100·0	100·0	100·0	100·0	100·0
Less than 0·25	–	–	–	0·4	0·7
0·25-0·49	2·0	5·4	4·2	6·3	14·3
0·50-0·74	29·6	35·3	27·6	41·5	39·5
0·75-0·99	31·0	28·7	24·6	19·8	17·0
1·00-1·49	31·0	27·9	37·9	28·3	25·5
1·50-1·99	4·4	1·7	4·3	2·9	1·8
2·00 and over	2·0	1·0	1·4	0·8	1·2

It may be noted that the degree of crowding appeared to vary materially between cities, relief families in Calgary and Edmonton living generally in fewer rooms than families of corresponding size in the other Prairie cities. This cannot be attributed to higher rent levels as indicated by the following monthly rent averages for May, 1936, which are based upon a random representation of over 500 families in each city:* Winnipeg $24, Regina $22, Saskatoon $20, Calgary $21 and Edmonton $19.

Relief crowding as shown above was compared for three Prairie cities with general conditions relating to rooms per person in 1936. The data shown below on general conditions are from a sample of the total tenant wage-earner population of these cities.

PERCENTAGE DISTRIBUTION OF PERSONS IN RELIEF TENANT FAMILIES COMPARED WITH THAT FOR ALL TENANTS, BY NUMBER OF ROOMS PER PERSON, 1936

Rooms per Person	Winnipeg		Calgary		Edmonton	
	Relief Tenants	All Tenants	Relief Tenants	All Tenants	Relief Tenants	All Tenants
Total	100·0	100·0	100·0	100·0	100·0	100·0
Less than 0·25	–	–	0·4	–	0·7	0·8
0·25-0·49	2·0	3·1	6·3	2·2	14·3	5·6
0·50-0·74	29·6	15·5	41·5	18·7	39·5	20·1
0·75-0·99	31·0	13·0	19·8	9·6	17·0	10·4
1·00-1·49	31·0	42·7	28·3	38·8	25·5	37·9
1·50-1·99	4·4	16·9	2·9	18·4	1·8	15·0
2·00 and over	2·0	8·8	0·8	12·3	1·2	10·2

The difference between these distributions is easily discerned, and would be more clear-cut if it had been possible to segregate relief from self-supporting families in the "All tenants" percentages. The general 1936 proportion of persons with less than one room per person approximated 30 to 35 p.c. as compared with 60 to 70 p.c. for the relief sample.

Rent Levels Among Relief Families.—The most typical monthly rental for Prairie city relief families in 1936 was between $10 and $14 per month. However, a considerable proportion lived in houses renting for between $15 and $24 per month as may be observed below.

* See page 464.

NUMERICAL DISTRIBUTION OF RELIEF TENANT FAMILIES, BY MONTHLY RENTAL, 1936

Monthly Rental	Winnipeg	Regina	Saskatoon	Calgary	Edmonton
Total	518	417	453	536	501
Under $10	24	88	193	44	56
$10-$14	268	225	193	235	231
15- 19	144	68	54	206	175
20- 24	41	26	7	42	28
25 and over	41	10	6	9	11
Average relief rental $	15	12	10	14	13
Average[1] rental for city $	24	22	20	21	19

[1] Based on random selection of not less than 500 tenant families in each city.

Some notion of the quality of relief accommodation may be gained by comparing monthly rent per room for relief families and the random selection of all wage-earner tenant families in the five Prairie cities of 30,000 population and over in 1936. Here, again, it must be borne in mind that the general sample included a random selection of relief cases as well as self-supporting families. The preceding statement would indicate, however, that averages at least in the $20-$24 per month group were influenced very little by relief cases. Rent per room for the two samples may be observed from the statement below which points to housing standards substantially lower for relief than for the general samples of families except in Calgary. Differences, as might be expected, are most clearly apparent in the highest rent group. Presumably, families in the general sample paying less than $10 per month are mostly relief cases. It was pointed out in Chapter X, page 538 that very few self-supporting wage-earner families paying less than $100 per annum were found during the Bureau's 1938 survey of family living expenditures. Some indication of housing standards at low rent levels may be gained by referring to the section "Characteristics of Families and Housing Amenities at Low Rent Levels" in Chapter X, pages 538-9.

RENT PER ROOM AT SPECIFIED MONTHLY RENTAL LEVELS FOR RELIEF TENANT FAMILIES COMPARED WITH THAT FOR ALL TENANTS, 1936

Monthly Rental	Winnipeg		Regina		Saskatoon		Calgary		Edmonton	
	Relief Tenants	All Tenants	Relief Tenants	All Tenants	Relief Tenants	All Tenants	Relief Tenants	All Tenants	Relief Tenants	All Tenants
	$	$	$	$	$	$	$	$	$	$
Less than $10	4·3	4·0	2·6	2·8	1·8	2·2	4·4	3·1	2·6	3·1
$10-$14	4·2	4·3	3·1	3·6	2·4	2·8	4·2	4·3	3·9	3·8
15- 19	3·6	4·0	3·2	3·9	2·7	3·6	4·1	4·1	3·8	4·2
20- 24	3·5	4·8	3·8	4·5	3·4	4·1	4·5	4·6	3·9	4·4

As might be expected, definite relationships existed between amount of rent and number of rooms per household and per person for relief families. The statement following shows averages under these two rubrics for the 1936 sample of relief families in the five Prairie cities. The small average number of rooms per household in Calgary and Edmonton at all rent levels is undoubtedly related to the fact that more than one-fifth of relief families in these two cities lived in apartments. In other Western cities this proportion approximated 10 p.c. Rents in Calgary averaged higher than in Edmonton for both relief and general samples of tenant families which may account for differences in rent per room at parallel family rent levels in these two samples. Rent per room for Edmonton relief families was materially lower than for the general sample of tenant families while as noted in the preceding paragraph no such difference was observable in Calgary data.

AVERAGE NUMBER OF ROOMS PER HOUSEHOLD AND PER PERSON AT SPECIFIED MONTHLY RENTAL LEVELS FOR RELIEF TENANT FAMILIES, 1936

Monthly Rental	Winnipeg		Regina		Saskatoon		Calgary		Edmonton	
	Rooms per House-hold	Rooms per Person	Rooms per House-hold	Rooms per Person	Rooms per House-hold	Rooms per Person	Rooms per House-hold	Rooms per Person	Rooms per House-hold	Rooms per Person
Relief tenants	3·8	0·87	3·9	0·82	4·4	0·91	3·3	0·79	3·5	0·75
Less than $10	1·9	0·66	2·9	0·81	3·8	0·90	1·9	0·70	2·8	0·60
$10-$14	2·9	0·82	3·7	0·80	4·6	0·90	2·9	0·83	2·9	0·71
15- 19	4·5	0·84	4·9	0·81	5·7	0·94	3·8	0·78	4·1	0·79
20- 24	5·8	0·96	5·3	0·85	5·8	0·85	4·5	0·73	5·3	0·88
25 and over	6·3	1·20	5·4	1·17	5·1	0·86	4·5	1·05	6·1	1·18
General sample	-	1·07	-	1·05	-	1·16	-	1·11	-	1·03

PART II

TABLE 1. Percentage distribution of households according to number of rooms occupied, rural and urban, Canada and provinces, and cities of 30,000 population and over, 1931

No. of Rooms	Canada	Rural									
		Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
All households	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Households with—											
1 room	3·74	5·61	0·51	0·83	1·77	2·07	2·31	7·11	10·18	15·55	11·24
2 rooms	6·70	9·69	1·93	3·02	5·55	6·38	4·38	16·25	18·48	18·79	13·75
3 "	8·79	10·27	3·07	5·41	6·57	8·81	6·10	14·11	17·47	16·06	13·81
4 "	13·85	13·80	6·16	9·72	10·59	13·30	9·79	16·57	18·02	18·31	21·38
5 "	15·23	12·76	8·93	11·24	10·42	12·03	12·26	15·78	12·77	12·11	16·23
6 "	18·23	13·26	13·27	15·18	12·90	13·59	17·16	11·87	9·19	8·47	10·65
7 "	12·68	10·81	14·57	15·99	11·97	12·76	14·81	7·45	5·02	4·63	5·76
8 "	9·45	9·92	18·31	17·10	14·59	12·89	13·33	5·11	4·01	3·21	3·41
9 "	4·73	5·59	12·00	9·47	8·95	7·15	8·00	2·47	1·81	1·33	1·39
10 "	3·11	3·95	10·04	6·35	7·66	4·66	5·90	1·43	1·09	0·72	0·89
11–15 "	2·92	3·70	10·58	5·35	8·48	4·60	5·51	1·02	0·74	0·54	0·77
16–20 "	0·22	0·21	0·57	0·30	0·48	0·34	0·26	0·05	0·02	0·02	0·06
21 and over	0·04	0·03	0·05	0·02	0·02	0·07	0·03	0·01	[1]	[1]	0·02
Not stated	0·31	0·40	0·01	0·02	0·05	0·75	0·16	0·77	0·60	0·26	0·65

No. of Rooms	Urban									
	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
All households	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Households with—										
1 room	2·21	0·69	1·11	0·61	1·28	1·22	3·38	6·42	6·35	5·08
2 rooms	4·27	2·16	3·98	2·40	2·60	3·33	6·49	9·19	9·40	7·48
3 "	7·58	2·68	6·97	4·28	6·76	6·49	11·96	11·45	10·55	9·74
4 "	13·88	8·24	11·17	9·01	18·25	8·92	14·39	17·19	16·67	21·67
5 "	17·25	10·03	13·26	14·94	20·54	14·01	20·05	18·43	19·88	20·07
6 "	22·29	18·03	18·41	19·72	18·92	28·17	18·98	16·72	17·71	16·66
7 "	14·20	18·55	17·94	16·81	13·27	16·79	11·67	10·07	9·54	9·44
8 "	9·06	15·57	12·46	14·12	8·68	10·83	6·18	5·38	5·46	6·14
9 "	4·04	9·04	6·48	7·64	3·82	4·80	3·09	2·14	1·90	1·99
10 "	2·42	7·30	3·96	4·91	2·37	2·78	1·93	1·39	1·12	1·14
11–15 "	2·29	6·78	3·93	4·98	2·72	2·32	1·63	0·99	0·96	1·02
16–20 "	0·22	0·80	0·26	0·45	0·36	0·18	0·09	0·10	0·11	0·15
21 and over	0·06	0·09	0·06	0·10	0·11	0·03	0·03	0·02	0·02	0·06
Not stated	0·23	0·14	0·01	0·03	0·31	0·13	0·13	0·61	0·33	0·36

No. of Rooms	Cities of 30,000 population and over	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Quebec, Que.	Verdun, Que.	Three Rivers, Que.	Toronto, Ont.	Hamilton, Ont.	Ottawa, Ont.	London, Ont.
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
All households	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Households with—											
1 room	2·50	1·73	0·46	1·95	0·62	0·18	0·37	1·40	1·68	1·24	0·89
2 rooms	4·43	6·93	1·80	2·55	2·28	0·61	2·11	4·69	3·06	2·84	1·28
3 "	8·65	11·11	5·25	7·62	7·80	7·33	5·12	10·46	5·64	4·92	2·38
4 "	15·17	15·62	11·36	19·57	22·43	34·39	18·43	9·82	9·07	8·58	4·88
5 "	18·62	14·43	20·60	22·94	18·73	32·88	25·54	12·33	17·76	12·16	16·51
6 "	23·60	17·26	26·16	20·16	17·43	19·22	23·65	32·11	34·28	20·42	32·49
7 "	12·72	15·79	17·29	14·30	11·65	3·44	11·34	10·24	15·70	22·12	21·88
8 "	7·44	7·08	8·67	6·55	8·28	1·16	7·03	9·85	6·50	11·81	10·60
9 "	3·05	4·10	3·76	2·10	3·77	0·45	2·86	4·21	2·89	6·09	4·60
10 "	1·78	2·67	2·05	1·02	2·63	0·17	1·82	2·42	1·62	4·42	2·30
11–15 "	1·66	2·92	2·26	1·04	3·66	0·15	1·45	2·14	1·46	4·68	1·78
16–20 "	0·17	0·21	0·27	0·16	0·53	0·02	0·23	0·17	0·14	0·35	0·19
21 and over	0·05	0·12	0·04	0·07	0·19	[1]	0·05	0·04	0·02	0·07	0·02
Not stated	0·16	0·03	0·03	0·07	[1]	[1]	[1]	0·12	0·19	0·30	0·30

[1] Less than 0·01 per cent.

TABLE 1. Percentage distribution of households according to number of rooms occupied, rural and urban, Canada and provinces, and cities of 30,000 population and over, 1931—Con.

No. of Rooms	Windsor, Ont.	Kitchener, Ont.	Brantford, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.	Victoria, B.C.
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
All households	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Households with—										
1 room	1·36	1·70	1·26	3·77	7·46	6·21	5·89	7·12	5·04	6·52
2 rooms	3·93	4·34	2·28	6·90	9·61	7·34	8·98	8·18	7·71	4·73
3 "	8·19	9·54	3·31	12·69	10·34	8·20	10·53	9·13	10·28	8·18
4 "	9·37	8·12	6·81	13·81	15·79	14·90	12·95	17·30	23·39	13·70
5 "	22·72	8·39	12·68	20·26	20·83	19·68	21·85	20·37	19·25	22·22
6 "	27·40	29·90	35·31	18·40	17·13	17·81	19·34	17·54	16·00	19·53
7 "	13·38	20·63	20·61	10·79	8·78	12·38	9·47	10·52	9·06	11·51
8 "	8·42	10·45	9·88	5·90	4·74	6·32	6·15	5·34	4·89	6·99
9 "	2·69	3·46	3·97	3·21	2·13	3·05	2·02	1·85	1·92	2·67
10 "	1·42	1·63	2·02	2·12	1·79	1·70	1·19	1·19	1·06	1·84
11–15 "	0·98	1·17	1·59	1·86	1·12	1·21	1·11	0·96	0·94	1·33
16–20 "	0·10	0·11	0·12	0·10	0·08	0·14	0·12	0·13	0·12	0·34
21 and over	[1]	[1]	[1]	0·02	0·02	0·03	0·01	0·05	0·07	0·05
Not stated	0·04	0·56	0·16	0·17	0·18	1·03	0·39	0·32	0·27	0·39

[1] Less than 0·01 per cent

TABLE 2. Number of dwellings and percentage distribution according to material of construction, Canada and provinces, 1891-1931

Year	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Britisb Columbia
					TOTAL DWELLINGS					
1891	856,607	18,389	79,102	54,718	246,644	406,948	30,790	–	–	20,016
1901	1,018,015	18,530	85,313	58,226	291,427	445,310	49,784	17,645	14,842	36,938
1911	1,408,689	18,237	93,784	60,930	340,196	529,190	85,720	118,283	87,672	74,677
1921	1,764,012	18,628	102,807	70,428	398,267	637,552	117,541	163,661	136,125	119,003
1931	1,984,286	18,521	101,630	72,197	387,052	745,889	134,663	192,752	165,366	166,216
					P.C. CONSTRUCTED OF WOOD					
1891	80·16	99·32	98·55	97·23	76·47	74·81	90·24	–	–	81·81
1901	72·56	98·32	98·45	94·56	69·69	63·11	86·95	71·88	71·33	83·06
1911	74·31	99·11	98·46	98·28	66·03	57·81	89·54	94·81	96·21	97·37
1921	72·93	99·37	98·56	97·36	65·66	51·19	92·45	95·41	96 01	96·32
1931	70·25	98·96	98·57	97·56	65·44	46·28	87·98	94·16	94·60	91·22
					P.C. CONSTRUCTED OF BRICK					
1891	15·34	0·39	0·33	1·55	17·66	20·94	3·46	–	–	1·90
1901	16·16	0·28	0·36	1·31	18·57	23·64	5·07	2·76	0·65	2·53
1911	20·05	0·37	1·08	1·42	27·44	33·69	5·93	1·29	1·34	1·45
1921	21·71	0·35	0·74	1·80	27·76	40·22	5·03	1·97	2·22	1·52
1931	23·16	0·52	0·55	1·66	28·63	44·26	5·49	1·94	2·18	1 25
					P.C. CONSTRUCTED OF STONE, CONCRETE, ETC.					
1891	4·50	0·29	1·12	1·22	5·87	4·25	6·30	–	–	16·29
1901	11·28	1·40	1·19	4·13	11·74	13·25	7·98	25·36	28·02	14·41
1911	5·64	0·52	0·46	0·30	6·53	8·50	4·53	3·90	2·45	1·18
1921	5·36	0 28	0·70	0·84	6·53	8·59	2·52	2·62	1·77	2·16
1031	6·59	0 52	0·88	0·78	5 93	9·46	6·53	3 90	3 22	7·53

TABLE 3. Number of dwellings and percentage distribution according to material of construction, rural and urban, Canada and provinces, and cities of 30,000 population and over, 1931 and 1921

Province or City	1931				1921			
	Total Dwellings	P.C. Constructed of—			Total Dwellings	P.C. Constructed of—		
		Wood	Brick	Stone, Concrete, etc.		Wood	Brick	Stone, Concrete, etc.
CANADA—								
Rural	**1,002,397**	**86·58**	**9·25**	**4·17**	**920,424**	**88·59**	**7·90**	**3·51**
Prince Edward Island	14,390	99·33	0·13	0·54	14,620	99·76	0·09	0·15
Nova Scotia	59,734	99·72	0·06	0·22	62,008	99·75	0·03	0·22
New Brunswick	51,431	99·38	0·23	0·39	49,372	99·05	0·40	0·55
Quebec	175,833	92·13	4·99	2·88	177,575	94·12	3·67	2·21
Ontario	304,589	65·07	26·45	8·48	274,429	69·55	23·02	7·43
Manitoba	78,787	93·58	2·42	4·00	70,558	95·40	2·06	2·54
Saskatchewan	131,188	97·66	0·54	1·80	116,636	97·20	0·52	2·28
Alberta	105,508	98·21	0·34	1·45	87,401	97·70	0·49	1·81
British Columbia	80,937	95·45	0·28	4·27	67,825	97·24	0·43	2·33
Urban	**981,889**	**53·57**	**37·37**	**9·06**	**843,588**	**55·84**	**36·79**	**7·37**
Prince Edward Island	4,131	97·68	1·89	0·43	4,008	97·96	1·32	0·72
Nova Scotia	41,896	96·94	1·24	1·82	40,799	96·75	1·82	1·43
New Brunswick	20,766	93·06	5·18	1·76	21,056	93·41	5·07	1·52
Quebec	211,219	43·23	48·31	8·46	220,692	42·76	47·15	10·09
Ontario	441,300	33·32	56·55	10·13	363,123	37·31	53·21	9·48
Manitoba	55,876	80·10	9·82	10·08	46,983	88·02	9·49	2·49
Saskatchewan	61,564	84·10	4·93	10·97	47,025	90·99	5·57	3·44
Alberta	59,858	88·25	5·42	6·33	48,724	92·97	5·33	1·70
British Columbia	85,279	87·21	2·17	10·62	51,178	95·10	2·98	1·92
Cities of 30,000 population and over—								
Halifax, N.S.	8,980	90·60	2·86	6·54	9,225	89·04	6·20	4·76
Saint John, N.B.	5,899	89·15	9·27	1·58	6,980	87·64	10·44	1·92
Montreal, Que.	71,997	6·48	80·22	13·30	94,895	10·75	72·30	16·95
Quebec, Que.	13,144	16·34	74·19	9·47	15,613	23·74	68·44	7·82
Verdun, Que.	4,893	5·60	89·99	4·41	4,730	9·75	87·61	2·64
Three Rivers, Que.	3,857	45·45	47·37	7·18	3,502	65·93	26·27	7·80
Toronto, Ont.	120,419	4·86	84·99	10·15	98,595	6·65	80·46	12·89
Hamilton, Ont.	32,155	33·33	63·75	2·92	24,126	32·34	63·95	3·71
Ottawa, Ont.	22,000	25·64	68·66	5·70	19,602	31·01	62·69	6·30
London, Ont.	16,412	28·88	60·05	11·07	14,176	38·94	58·25	2·81
Windsor, Ont.	11,891	48·11	42·87	9·02	7,800	68·71	22·09	9·20
Kitchener, Ont.	5,990	5·46	91·22	3·32	4,201	9·38	85·57	5·05
Brantford, Ont.	6,953	13·98	81·04	4·98	6,619	16·45	78·00	5·55
Winnipeg, Man.	35,778	76·77	9·97	13·26	29,895	88·16	9·34	2·50
Regina, Sask.	9,635	67·44	9·07	23·49	6,191	82·44	13·00	4·56
Saskatoon, Sask.	8,275	74·51	4·56	20·93	5,290	91·11	6·64	2·25
Calgary, Alta.	16,292	81·68	6·69	11·63	13,031	90·87	7·50	1·63
Edmonton, Alta.	16,029	88·06	5·81	6·13	12,445	94·70	4·44	0·86
Vancouver, B.C.	50,194	83·93	1·79	14·28	21,489	94·69	3·35	1·96
Victoria, B.C.	9,045	86·06	6·10	7·84	8.595	90·82	6·48	2·70

TABLE 4. Numerical distribution of households according to type of dwelling, rural and urban, Canada and provinces, and cities of 30,000 population and over, 1931

Province or City	All Types of Dwellings[1]	Single Houses	Semi-Detached	Apartments and Flats	Rows or Terraces	Hotels and Rooming Houses	Other and Not Specified
CANADA	**2,266,071**	**1,718,460**	**159,673**	**338,187**	**36,408**	**6,576**	**6,868**
Prince Edward Island	18,774	17,327	1,116	193	97	36	5
Nova Scotia	108,988	93,787	7,086	6,907	894	204	110
New Brunswick	80,522	64,666	2,998	12,616	113	179	61
Quebec	538,161	271,160	34,931	220,653	8,825	1,678	1,014
Ontario	813,908	624,210	105,240	67,637	23,070	1,817	1,934
Manitoba	149,494	132,573	2,530	12,113	1,333	464	481
Saskatchewan	200,372	191,673	1,452	5,913	327	446	661
Alberta	174,692	163,276	1,932	7,763	517	535	669
British Columbia	181,160	159,788	2,288	14,593	1,232	1,216	2,043
Rural	**1,019,682**	**982,948**	**18,298**	**9,507**	**1,179**	**1,449**	**6,201**
Prince Edward Island	14,490	14,312	136	26	-	14	2
Nova Scotia	60,991	59,261	1,147	374	60	64	95
New Brunswick	52,885	50,677	799	1,281	19	68	61
Quebec	179,647	172,703	2,756	2,686	149	361	992
Ontario	311,317	293,599	11,437	3,576	436	453	1,816
Manitoba	79,573	78,259	356	341	79	103	435
Saskatchewan	132,624	131,476	482	206	18	35	407
Alberta	106,405	104,810	540	277	145	84	549
British Columbia	81,650	77,851	645	740	283	277	1,854
Urban	**1,246,489**	**735,512**	**141,275**	**328,680**	**35,229**	**5,126**	**667**
Prince Edward Island	4,284	3,015	980	167	97	22	3
Nova Scotia	47,997	34,526	6,939	6,533	844	140	15
New Brunswick	27,637	13,989	2,199	11,234	94	121	-
Quebec	358,514	98,457	32,175	217,867	8,676	1,317	22
Ontario	602,591	330,611	93,803	54,061	22,634	1,364	118
Manitoba	69,921	64,314	2,174	11,772	1,254	361	46
Saskatchewan	67,748	60,197	970	5,707	309	411	154
Alberta	68,287	58,466	1,392	7,486	372	451	120
British Columbia	99,510	81,937	1,643	13,853	949	939	189
Cities of 30,000 population and over—							
Halifax, N.S.	12,190	6,619	1,503	3,481	644	43	-
Saint John, N.B.	10,922	1,969	344	8,492	85	32	-
Montreal, Que.	171,317	9,469	9,231	147,347	4,762	503	6
Quebec, Que.	23,123	4,063	3,588	14,339	1,053	80	-
Verdun, Que.	13,917	427	433	13,026	28	3	-
Three Rivers, Que.	6,207	1,308	1,009	3,420	454	16	-
Toronto, Ont.	149,966	51,015	64,590	20,881	13,052	377	61
Hamilton, Ont.	37,262	26,478	4,682	4,513	1,644	43	2
Ottawa, Ont.	27,699	12,936	4,746	6,354	3,622	39	2
London, Ont.	17,578	14,976	992	1,395	186	28	1
Windsor, Ont.	14,921	10,357	495	3,791	257	20	1
Kitchener, Ont.	7,202	5,778	473	758	180	13	-
Brantford, Ont.	7,498	6,402	650	368	67	10	1
Winnipeg, Man.	48,553	35,043	1,735	10,361	1,155	252	7
Regina, Sask.	12,064	9,778	172	1,945	122	45	2
Saskatoon, Sask.	9,762	8,240	68	1,292	98	53	11
Calgary, Alta.	20,531	16,422	397	3,323	223	146	20
Edmonton, Alta.	18,997	15,313	631	2,839	85	114	15
Vancouver, B.C.	61,250	48,656	1,067	10,375	432	601	119
Victoria, B.C.	10,617	8,401	104	1,599	327	79	7

[1] Exclusive of institutions.

TABLE 5. Percentage distribution of households according to type of dwelling, rural and urban, Canada and provinces, and cities of 30,000 population and over, 1931

Province or City	All Types of Dwellings	Single Houses	Semi-Detached	Apartments and Flats	Rows or Terraces	Hotels and Rooming Houses	Other and Not Specified
CANADA	**100·00**	**75·83**	**7·04**	**14·92**	**1·61**	**0·29**	**0·31**
Prince Edward Island	100·00	92·29	5·94	1·03	0·52	0·19	0·03
Nova Scotia	100·00	86·05	6·50	6·34	0·82	0·19	0·10
New Brunswick	100·00	80·31	3·72	15·54	0·14	0·23	0·06
Quebec	100·00	50·39	6·49	40·98	1·64	0·31	0·19
Ontario	100·00	76·69	12·93	7·08	2·84	0·22	0·24
Manitoba	100·00	88·68	1·69	8·10	0·89	0·31	0·33
Saskatchewan	100·00	95·66	0·72	2·96	0·16	0·22	0·28
Alberta	100·00	93·47	1·11	4·44	0·30	0·30	0·38
British Columbia	100·00	88·20	1·26	8·06	0·68	0·67	1·13
Rural	**100·00**	**96·41**	**1·79**	**0·93**	**0·12**	**0·14**	**0·61**
Prince Edward Island	100·00	98·77	0·94	0·18	-	0·10	0·01
Novn Scotia	100·00	97·16	1·88	0·61	0·08	0·11	0·16
New Brunswick	100·00	95·82	1·51	2·42	0·04	0·11	0·10
Quebec	100·00	96·13	1·54	1·50	0·08	0·20	0·55
Ontario	100·00	94·31	3·67	1·15	0·14	0·15	0·58
Manitoba	100·00	98·35	0·45	0·43	0·10	0·13	0·54
Saskatchewan	100·00	99·13	0·36	0·16	0·01	0·03	0·31
Alberta	100·00	98·50	0·51	0·26	0·14	0·08	0·51
British Columbia	100·00	95·35	0·79	0·90	0·35	0·34	2·27
Urban	**100·00**	**59·61**	**11·33**	**26·37**	**2·83**	**0·41**	**0·05**
Prince Edward Island	100·00	70·38	22·88	3·90	2·26	0·51	0·07
Nova Scotia	100·00	71·94	12·37	13·61	1·76	0·29	0·03
New Brunswick	100·00	50·62	7·96	40·35	0·34	0·43	-
Quebec	100·00	27·46	8·97	60·77	2·42	0·37	0·01
Ontario	100·00	65·78	18·67	10·76	4·50	0·27	0·02
Manitoba	100·00	77·68	3·11	16·84	1·79	0·52	0·06
Saskatchewan	100·00	88·85	1·43	8·42	0·46	0·61	0·23
Alberta	100·00	85·62	2·04	10·96	0·54	0·66	0·18
British Columbia	100·00	82·34	1·65	13·92	0·95	0·95	0·19
Cities of 30,000 population and over—							
Halifax, N.S.	100·00	54·30	12·34	28·55	4·46	0·35	-
Saint John, N.B.	100·00	18·03	3·15	77·75	0·78	0·29	-
Montreal, Que.	100·00	5·53	5·39	86·01	2·78	0·29	[1]
Quebec, Que.	100·00	17·57	15·52	62·01	4·55	0·35	-
Verdun, Que.	100·00	3·07	3·11	93·60	0·20	0·02	-
Three Rivers, Que.	100·00	21·07	16·26	55·10	7·31	0·26	-
Toronto, Ont.	100·00	34·02	43·07	13·92	8·70	0·25	0·04
Hamilton, Ont.	100·00	71·06	12·56	12·11	4·14	0·12	0·01
Ottawa, Ont.	100·00	46·70	17·13	22·94	13·08	0·14	0·01
London, Ont.	100·00	85·20	5·64	7·93	1·06	0·16	0·01
Windsor, Ont.	100·00	69·41	3·32	25·41	1·72	0·13	0·01
Kitchener, Ont.	100·00	80·23	6·57	10·52	2·50	0·18	-
Brantford, Ont.	100·00	85·38	8·67	4·91	0·89	0·14	0·01
Winnipeg, Man.	100·00	72·18	3·57	21·34	2·38	0·52	0·01
Regina, Sask.	100·00	81·05	1·43	16·12	1·01	0·37	0·02
Saskatoon, Sask.	100·00	84·41	0·70	13·24	1·00	0·54	0·11
Calgary, Alta.	100·00	79·99	1·93	16·18	1·09	0·71	0·10
Edmonton, Alta.	100·00	80·61	3·32	14·94	0·45	0·60	0·08
Vancouver, B.C.	100·00	79·44	1·74	16·94	0·71	0·98	0·19
Victoria, B.C.	100·00	79·88	0·99	15·20	3·11	0·75	0·07

[1] Less than 0·01 per cent.

TABLE 6. Percentage distribution of population in households according to type of dwelling, rural and urban, Canada and provinces, and cities of 30,000 population and over, 1931

Province or City	Total Population in Households	Percentage of the Population Living in—					
		Single Houses	Semi-Detached	Apartments and Flats	Rows or Terraces	Hotels and Rooming Houses	Other and Not Specified Lodgings
CANADA	**10,152,844**	**76·32**	**7·07**	**13·56**	**1·70**	**0·90**	**0·45**
Prince Edward Island	87,004	92·11	6·74	0·77	0·55	0·79	0·04
Nova Scotia	504,132	85·75	7·14	5·51	0·88	0·49	0·23
New Brunswick	402,344	82·77	3·48	12·89	0·13	0·60	0·13
Quebec	2,790,748	54·73	6·32	36·31	1·62	0·78	0·24
Ontario	3,373,110	77·23	13·41	5·12	3·19	0·68	0·37
Manitoba	688,022	90·30	1·80	5·37	0·95	0·93	0·65
Saskatchewan	909,815	96·48	0·64	1·75	0·15	0·54	0·44
Alberta	722,162	94·30	1·06	2·82	0·29	1·06	0·47
British Columbia	675,517	87·47	1·22	5·45	0·65	3·34	1·87
Rural	**4,732,362**	**96·25**	**1·67**	**0·78**	**0·10**	**0·33**	**0·87**
Prince Edward Island	66,955	98·54	0·78	0·17	–	0·50	0·01
Nova Scotia	278,348	96·93	1·82	0·53	0·10	0·23	0·39
New Brunswick	275,900	96·27	1·32	1·94	0·03	0·26	0·18
Quebec	1,041,952	96·54	1·30	1·21	0·08	0·30	0·57
Ontario	1,317,779	94·14	3·63	0·87	0·13	0·37	0·86
Manitoba	380,759	97·73	0·44	0·38	0·11	0·23	1·11
Saskatchewan	628,006	98·97	0·34	0·14	0·01	0·05	0·49
Alberta	449,153	98·02	0·48	0·26	0·15	0·45	0·64
British Columbia	293,510	93·01	0·82	0·69	0·31	1·11	4·06
Urban	**5,420,482**	**58·92**	**11·79**	**24·72**	**3·09**	**1·40**	**0·08**
Prince Edward Island	20,049	70·64	22·29	2·81	2·38	1·72	0·16
Nova Scotia	225,784	71·96	13·70	11·66	1·84	0·81	0·03
New Brunswick	126,444	53·32	8·19	36·77	0·34	1·38	–
Quebec	1,748,796	29·82	9·31	67·23	2·53	1·07	0·04
Ontario	2,055,331	66·38	19·69	7·83	6·15	0·89	0·06
Manitoba	307,263	81·08	3·48	11·55	2·00	1·82	0·07
Saskatchewan	281,809	90·94	1·29	5·38	0·46	1·63	0·30
Alberta	272,999	88·19	2·02	7·03	0·51	2·07	0·18
British Columbia	382,007	83·21	1·61	9·10	0·92	6·07	0·19
Cities of 30,000 population and over—							
Halifax, N.S.	66,078	55·30	13·31	25·00	4·98	1·41	–
Saint John, N.B.	46,402	18·64	3·38	76·05	0·82	1·11	–
Montreal, Que.	794,384	6·26	5·94	83·69	3·04	1·07	[1]
Quebec, Que.	123,255	18·57	16·16	59·40	4·74	1·13	–
Verdun, Que.	59,494	3·51	3·40	92·84	0·21	0·04	–
Three Rivers, Que.	33,996	22·05	16·78	52·98	7·62	0·67	–
Toronto, Ont.	619,987	34·42	45·17	9·62	9·82	0·98	0·09
Hamilton, Ont.	153,829	73·39	13·22	8·46	4·58	0·33	0·02
Ottawa, Ont.	122,282	49·12	19·23	15·73	16·36	0·55	0·01
London, Ont.	68,388	86·70	6·00	5·55	1·26	0·48	0·01
Windsor, Ont.	62,538	74·52	3·36	20·00	1·70	0·41	0·01
Kitchener, Ont.	30,372	82·85	6·98	7·17	2·33	0·67	–
Brantford, Ont.	29,671	86·22	9·05	3·30	1·11	0·31	0·01
Winnipeg, Man.	215,317	76·80	4·05	14·47	2·66	1·99	0·03
Regina, Sask.	62,022	86·01	1·60	9·95	1·03	1·37	0·14
Saskatoon, Sask.	42,190	87·66	0·79	8·31	1·04	2·09	0·11
Calgary, Alta.	82,134	83·81	1·97	10·76	1·06	2·26	0·14
Edmonton, Alta.	77,400	84·63	3·38	8·95	0·41	2·58	0·05
Vancouver, B.C.	240,052	80·47	1·55	11·18	0·72	5·93	0·15
Victoria, B.C.	37,041	83·76	0·84	8·44	3·53	3·36	0·07

[1] Less than 0·01 per cent.

TABLE 7. Number per household of persons, children and rooms, and number of rooms per person, by type of dwelling, Canada, provinces and cities of 30,000 population and over, 1931

Province or City	No. of Persons per Household				No. of Children per Household[1]			
	Singls Houses	Semi-Detached	Apart-ments and Flats	Rows or Terraces	Singls Houses	Semi-Detached	Apart-ments and Flats	Rows or Terraces
CANADA	**4·51**	**4·50**	**4·07**	**4·74**	**2·19**	**2·03**	**1·84**	**2·07**
Prince Edward Island	4·63	4·47	3·49	4·92	2·20	2·13	1·14	2·25
Nova Scotia	4·51	5·08	4·03	4·96	2·22	2·68	1·79	2·54
Nsw Brunswick	5·15	4·67	4·14	4·58	2·68	2·24	1·88	2·31
Quebec	5·63	5·05	4·59	5·11	3·26	2·52	2·29	2·39
Ontario	4·17	4·30	2·99	4·66	1·84	1·81	0·94	2·02
Manitoba	4·69	4·89	3·05	4·91	2·32	2·09	0·97	1·78
Saskatchewan	4·58	4·00	2·70	4·17	2·33	1·63	0·78	1·71
Alberta	4·17	3·96	2·62	3·98	1·98	1·50	0·77	1·74
British Columbia	3·70	3·59	2·52	3·58	1·51	1·34	0·66	0·96
Cities of 30,000 population and over—								
Halifnx, N.S.	4·69	4·96	4·03	5·13	2·09	2·26	1·75	2·56
Saint John, N.B.	4·39	4·56	4·16	4·49	1·89	2·17	1·90	2·25
Montreal, Qus.	5·25	5·11	4·51	5·06	2·58	2·55	2·19	2·17
Quebec, Qus.	5·53	5·55	5·11	5·55	3·11	3·10	2·78	2·66
Verdun, Que.	4·89	4·67	4·24	4·54	2·57	2·48	2·05	2·13
Three Rivers, Que.	5·73	5·65	5·27	5·63	3·22	3·27	2·91	3·38
Toronto, Ont.	4·18	4·34	2·83	4·57	1·65	1·76	0·83	1·95
Hamilton, Ont.	4·25	4·34	2·88	4·57	1·81	1·84	0·85	2·03
Ottawa, Ont.	4·64	4·95	3·03	5·19	2·12	2·48	0·99	2·52
London, Ont.	3·95	4·13	2·72	4·65	1·62	1·44	0·69	1·56
Windsor, Ont.	4·50	4·25	3·30	4·14	2·00	1·79	1·12	1·64
Kitchener, Ont.	4·35	4·48	2·87	3·93	1·92	2·11	0·86	1·58
Brantford, Ont.	4·00	4·13	2·55	4·94	1·69	1·76	0·73	2·02
Winnipeg, Man.	4·72	5·02	3·01	4·96	2·10	1·97	0·91	1·68
Regina, Sask.	4·58	4·54	2·66	4·39	2·05	1·93	0·73	1·79
Saskatoon, Sask.	4·49	4·90	2·71	4·50	2·00	1·64	0·70	1·68
Calgary, Alta.	4·19	4·07	2·65	3·92	1·78	1·52	0·77	1·41
Edmonton, Alta.	4·28	4·14	2·44	3·74	1·94	1·67	0·65	1·41
Vancouver, B.C.	3·97	3·48	2·59	3·99	1·54	1·21	0·69	1·19
Victoria, B.C.	3·69	3·00	1·96	4·00	1·46	1·09	0·40	0·76

Province or City	No. of Rooms per Household				No. of Rooms per Person			
	Singls Houses	Semi-Detached	Apart-ments and Flats	Rows or Terraces	Single Houses	Semi-Dstached	Apart-ments and Flnts	Rows or Terraces
CANADA	**5·77**	**5·87**	**4·80**	**5·68**	**1·28**	**1·30**	**1·18**	**1·20**
Prince Edward Island	7·57	6·48	5·05	6·25	1·64	1·45	1·45	1·27
Nova Scotia	6·79	5·63	4·51	5·18	1·47	1·11	1·12	1·04
New Brunswick	5·93	6·34	5·69	6·19	1·35	1·36	1·37	1·35
Quebec	6·35	6·15	5·24	6·25	1·13	1·22	1·14	1·22
Ontario	6·50	5·87	4·19	5·71	1·56	1·36	1·40	1·22
Manitoba	4·92	4·81	3·45	4·55	1·05	0·98	1·14	0·93
Saskatchewan	4·31	4·53	2·79	4·84	0·94	1·13	1·03	1·16
Alberta	4·20	4·56	2·67	3·52	1·01	1·15	1·02	0·88
British Columbia	4·69	4·44	2·97	3·61	1·27	1·24	1·18	1·01
Citiss of 30,000 population and ovsr—								
Halifax, N.S.	6·23	5·67	4·41	5·33	1·33	1·14	1·09	1·04
Saint John, N.B.	7·21	6·62	5·73	6·29	1·64	1·45	1·38	1·40
Montreal, Qus.	6·82	6·29	5·26	6·10	1·30	1·23	1·17	1·21
Quebec, Qus.	6·76	6·02	5·40	7·56	1·20	1·08	1·05	1·36
Verdun, Que.	5·88	5·47	4·76	6·64	1·20	1·17	1·12	1·46
Three Rivers, Que.	6·54	5·70	5·33	5·47	1·14	1·01	1·01	0·97
Toronto, Ont.	6·50	5·87	3·96	5·43	1·55	1·35	1·40	1·16
Hamilton, Ont.	6·13	5·75	4·03	5·63	1·44	1·32	1·39	1·23
Ottawa, Ont.	7·30	6·67	4·79	6·58	1·57	1·35	1·58	1·27
London, Ont.	6·51	5·48	4·50	6·31	1·64	1·57	1·65	1·36
Windsor, Ont.	6·11	5·84	4·25	5·49	1·36	1·38	1·29	1·32
Kitchener, Ont.	6·21	5·48	3·55	4·87	1·43	1·22	1·23	1·24
Brantford, Ont.	6·38	5·80	3·84	4·84	1·60	1·40	1·45	0·98
Winnipeg, Man.	5·75	4·81	3·48	4·53	1·22	0·96	1·16	0·91
Regina, Sask.	5·19	5·29	2·72	4·84	1·13	1·17	1·02	1·10
Saskatoon, Sask.	5·45	5·18	2·80	5·61	1·21	1·06	1·03	1·25
Calgary, Alta.	5·38	5·01	2·80	3·90	1·28	1·23	1·05	0·99
Edmonton, Alta.	5·33	4·90	2·39	5·27	1·25	1·18	0·98	1·41
Vancouver, B.C.	5·24	4·59	2·99	4·15	1·32	1·32	1·16	1·04
Victoria, B.C.	5·85	4·45	2·54	3·52	1·58	1·48	1·30	0·88

[1] Calculated for one-family households, since data on number of children are available only for this typs of household.

TABLE 8. Number of households, number per household of persons, children and rooms, and number of rooms per person, by tenure, rural and urban, Canada and provinces, 1931

Province	No. of Households			No. of Persons per Household		
	Total	Rural	Urban	Total	Rural	Urban
CANADA	**2,252,729**	**1,012,014**	**1,240,715**	**4·45**	**4·62**	**4·30**
Prince Edward Island	18,734	14,475	4,259	4·61	4·60	4·62
Nova Scotia	108,674	60,832	47,842	4·61	4·55	4·68
New Brunswick	80,292	62,776	27,516	4·97	5·20	4·53
Quebec	535,472	178,294	357,178	5·16	6·79	4·84
Ontario	810,157	309,048	601,109	4·12	4·21	4·06
Manitoba	148,590	79,074	69,516	4·56	4·75	4·34
Saskatchewan	199,385	132,202	67,183	4·52	4·73	4·11
Alberta	173,502	105,772	67,730	4·10	4·20	3·94
British Columbia	177,923	79,541	98,382	3·60	3·50	3·68
Owners	**1,362,890**	**797,812**	**565,084**	**4·57**	**4·73**	**4·34**
Prince Edward Island	15,871	13,474	2,397	4·61	4·62	4·54
Nova Scotia	75,208	52,216	22,992	4·57	4·55	4·63
New Brunswick	54,117	43,390	10,727	5·15	5·30	4·55
Quebec	256,629	150,562	106,067	5·69	5·99	5·26
Ontario	497,242	233,627	263,715	4·13	4·23	4·04
Manitoba	94,976	59,829	35,147	4·73	4·85	4·53
Saskatchewan	143,290	106,546	36,744	4·69	4·81	4·31
Alberta	121,491	85,470	36,021	4·25	4·29	4·18
British Columbia	104,072	52,798	51,274	3·68	3·53	3·84
Tenants	**889,833**	**214,202**	**675,631**	**4·26**	**4·21**	**4·27**
Prince Edward Island	2,863	1,001	1,862	4·59	4·35	4·72
Nova Scotia	33,466	8,616	24,850	4·68	4·53	4·73
New Brunswick	26,176	93,386	16,789	4·62	4·78	4·62
Quebec	278,843	27,732	251,111	4·67	4·74	4·67
Ontario	312,915	75,521	237,394	4·11	4·17	4·09
Manitoba	53,614	19,245	34,369	4·25	4·44	4·14
Saskatchewan	56,095	25,656	30,439	4·09	4·36	3·87
Alberta	52,011	20,302	31,709	3·74	3·84	3·67
British Columbia	73,851	26,743	47,108	3·49	3·45	3·51

Province	No. of Children per Household[1]			No. of Rooms per Household			No. of Rooms per Person		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
CANADA	**2·20**	**2·41**	**2·02**	**5·63**	**5·48**	**5·75**	**1·27**	**1·19**	**1·34**
Prince Edward Island	2·31	2·33	2·22	7·47	7·58	7·12	1·62	1·65	1·54
Nova Scotia	2·35	2·33	2·37	6·55	6·77	6·28	1·42	1·49	1·34
New Brunswick	2·65	2·88	2·21	6·72	6·73	6·68	1·35	1·29	1·47
Quebec	2·87	3·54	2·54	5·88	6·06	5·79	1·14	1·05	1·20
Ontario	1·84	1·97	1·76	6·23	6·46	6·09	1·51	1·63	1·50
Manitoba	2·26	2·53	1·96	4·80	4·41	6·24	1·05	0·93	1·21
Saskatchewan	2·33	2·54	1·91	4·26	3·98	4·81	0·94	0·84	1·17
Alberta	1·97	2·11	1·76	4·14	3·70	4·82	1·01	0·88	1·22
British Columbia	1·49	1·47	1·51	4·54	4·11	4·89	1·26	1·17	1·33
Owners	**2·22**	**2·41**	**1·96**	**6·06**	**5·70**	**6·57**	**1·33**	**1·21**	**1·51**
Prince Edward Island	2·17	2·20	2·00	7·73	7·72	7·79	1·68	1·67	1·72
Nova Scotia	2·16	2·17	2·15	7·09	6·98	7·35	1·55	1·53	1·59
New Brunswick	2·62	2·77	2·03	7·19	7·03	7·83	1·40	1·33	1·72
Quebec	3·24	3·54	2·82	6·62	6·28	7·09	1·16	1·05	1·35
Ontario	1·76	1·89	1·65	6·81	6·80	6·82	1·65	1·61	1·69
Manitoba	2·37	2·54	2·07	5·02	4·44	6·01	1·06	0·92	1·33
Saskatchewan	2·41	2·54	2·03	4·38	4·03	5·38	0·93	0·84	1·25
Alberta	2·07	2·13	1·91	4·27	3·74	5·51	1·00	0·87	1·32
British Columbia	1·54	1·47	1·60	4·93	4·33	5·54	1·34	1·23	1·44
Tenants	**1·96**	**2·02**	**1·94**	**4·96**	**4·64**	**5·06**	**1·16**	**1·10**	**1·18**
Prince Edward Island	2·22	2·20	2·23	6·07	5·75	6·25	1·32	1·32	1·32
Nova Scotia	2·38	2·36	2·38	6·34	5·50	5·29	1·14	1·21	1·12
New Brunswick	2·31	2·56	2·17	5·14	6·36	5·95	1·24	1·12	1·32
Quebec	2·35	2·59	2·32	5·20	4·82	5·24	1·11	1·02	1·12
Ontario	1·77	1·94	1·72	5·31	5·40	6·29	1·29	1·29	1·29
Manitoba	1·88	2·22	1·69	4·40	4·32	4·45	1·04	0·97	1·07
Saskatchewan	1·92	2·19	1·69	3·97	3·78	4·13	0·97	0·87	1·07
Alberta	1·59	1·71	1·51	3·83	3·52	4·03	1·03	0·92	1·10
British Columbia	1·31	1·30	1·31	4·00	3·67	4·19	1·15	1·06	1·19

[1] Children of lodging families not included in owner and tenant classification; these total 176,810 or 0·08 per household in all Canada.

TABLE 9. Number of households, number per household of persons, children[1] and rooms, and number of rooms per person, by tenure, cities of 30,000 population and over, 1931

City	No. of Households	No. of Persons per Household	No. of Children per Household	No. of Rooms per Household	No. of Rooms per Person
TOTAL					
Halifax, N.S.	12,147	4·55	2·14	5·60	1·23
Saint John, N.B.	10,890	4·21	1·98	6·03	1·43
Montreal, Que.	170,811	4·60	2·28	5·43	1·18
Quebec, Que.	23,043	5·29	2·94	5·83	1·10
Verdun, Que.	13,914	4·27	2·12	4·82	1·13
Three Rivers, Que.	6,191	5·45	3·15	6·65	1·04
Toronto, Ont.	149,538	4·10	1·68	5·78	1·41
Hamilton, Ont.	37,217	4·12	1·77	5·80	1·41
Ottawa, Ont.	27,658	4·40	2·06	6·52	1·48
London, Ont.	17,549	3·88	1·59	6·34	1·64
Windsor, Ont.	14,900	4·18	1·83	5·62	1·34
Kitchener, Ont.	7,189	4·20	1·86	5·85	1·39
Brantford, Ont.	7,487	3·95	1·71	6·19	1·57
Winnipeg, Man.	48,294	4·37	1·90	5·20	1·19
Regina, Sask.	12,017	4·26	1·89	4·79	1·12
Saskatoon, Sask.	9,698	4·25	1·88	5·09	1·20
Calgary, Alta.	20,371	3·94	1·66	4·94	1·25
Edmonton, Alta.	18,868	3·99	1·79	4·87	1·22
Vancouver, B.C.	60,530	3·72	1·52	4·83	1·30
Victoria, B.C.	10,431	3·43	1·33	5·26	1·53
OWNERS					
Halifax, N.S.	4,271	4·63	1·95	7·18	1·65
Saint John, N.B.	2,560	3·99	1·64	7·18	1·80
Montreal, Que.	25,455	5·02	2·59	6·82	1·36
Quebec, Que.	5,829	6·80	3·25	7·26	1·25
Verdun, Que.	1,632	4·71	2·50	5·89	1·25
Three Rivers, Que.	1,715	5·81	3·29	6·66	1·16
Toronto, Ont.	69,463	4·20	1·66	6·77	1·61
Hamilton, Ont.	17,876	4·14	1·70	6·55	1·58
Ottawa, Ont.	9,746	4·46	1·95	7·71	1·73
London, Ont.	9,726	3·80	1·44	6·80	1·79
Windsor, Ont.	5,951	4·33	1·83	6·52	1·51
Kitchener, Ont.	4,070	4·36	1·91	6·77	1·55
Brantford, Ont.	4,036	3·86	1·55	6·77	1·75
Winnipeg, Man.	22,712	4·66	2·09	6·19	1·33
Regina, Sask.	6,048	4·58	2·08	5·64	1·23
Saskatoon, Sask.	5,189	4·46	1·99	5·88	1·32
Calgary, Alta.	10,526	4·23	1·83	5·89	1·39
Edmonton, Alta.	10,007	4·24	1·95	5·62	1·32
Vancouver, B.C.	30,884	3·89	1·61	5·52	1·42
Victoria, B.C.	4,890	3·53	1·31	6·13	1·74
TENANTS					
Halifax, N.S.	7,876	4·51	2·07	4·73	1·05
Saint John, N.B.	8,330	4·28	1·99	5·68	1·33
Montreal, Que.	145,356	4·53	2·15	5·18	1·16
Quebec, Que.	17,214	5·12	2·73	5·35	1·05
Verdun, Que.	12,282	4·22	2·02	4·68	1·11
Three Rivers, Que.	4,476	5·32	2·98	5·27	0·99
Toronto, Ont.	80,075	4·02	1·54	4·93	1·23
Hamilton, Ont.	19,341	4·10	1·69	6·11	1·25
Ottawa, Ont.	17,912	4·36	1·96	6·88	1·35
London, Ont.	7,823	3·98	1·61	5·77	1·45
Windsor, Ont.	8,949	4·08	1·69	5·02	1·23
Kitchener, Ont.	3,119	3·98	1·66	4·63	1·16
Brantford, Ont.	3,451	4·06	1·76	5·51	1·36
Winnipeg, Man.	25,582	4·11	1·58	4·32	1·05
Regina, Sask.	5,969	3·94	1·60	3·93	1·00
Saskatoon, Sask.	4,509	4·02	1·63	4·19	1·04
Calgary, Alta.	9,845	3·62	1·37	3·92	1·08
Edmonton, Alta.	8,861	3·72	1·52	4·03	1·09
Vancouver, B.C.	29,646	3·55	1·30	4·12	1·16
Victoria, B.C.	5,541	3·34	1·23	4·49	1·34

[1] Children of lodging families not included in owner and tenant classification, these total 48,677, averaging 0·07 per household in the above 20 cities.

TABLE 10. Composition and accommodation of households according to size, Montreal, Toronto and Winnipeg, 1931

No. of Persons per Household	Households				No. of Private Families	No. of Persons	No. of Lodgers (other than lodging families)	Rooms		
	Total	P.C. Providing Accommodation of—						Total	Per Household	Per Person
		One Room per Person	Less than One Room per Person	More than One Room per Person						
MONTREAL, QUE.										
Total	**170,811**	**15·21**	**25·56**	**59·23**	**182,629**	**785,874**	**53,870**	**927,248**	**5·43**	**1·18**
1	6,939	25·42	–	74·58	6,939	6,939	–	21,977	3·17	3·17
2	28,983	5·79	3·67	90·54	28,983	57,966	3,180	129,773	4·48	2·24
3	31,184	9·94	3·56	86·50	31,704	93,552	7,045	157,688	5·06	1·69
4	28,694	20·22	8·24	71·54	30,256	114,776	8,179	156,839	5·47	1·37
5	23,462	23·22	22·81	53·97	25,404	117,310	7,923	135,062	5·76	1·15
6	17,298	23·80	41·04	35·16	19,186	103,788	6,781	103,513	5·98	1·00
7	12,439	20·97	61·38	17·65	14,083	87,073	5,799	76,823	6·18	0·88
8	8,431	12·05	79·08	8·87	9,691	67,448	4,708	53,860	6·39	0·80
9	5,521	4·98	89·97	5·05	6,482	49,689	3,438	36,059	6·53	0·73
10	3,551	3·12	93·02	3·86	4,237	35,510	2,579	24,146	6·80	0·68
11	2,019	1·43	95·05	3·52	2,467	22,209	1,561	13,983	6·93	0·63
12	1,130	1·06	95·66	3·28	1,435	13,560	1,034	8,159	7·22	0·60
13	605	1·16	94·71	4·13	814	7,865	724	4,678	7·73	0·59
14	302	0·99	96·03	2·98	441	4,228	369	2,403	7·96	0·57
15	142	0·71	97·18	2·11	245	2,130	243	1,184	8·34	0·56
16 and over	111	1·80	91·89	6·31	262	1,831	307	1,101	9·92	0·60
TORONTO, ONT.										
Total	**149,538**	**14·30**	**15·48**	**70·22**	**163,590**	**613,377**	**57,726**	**864,405**	**5·78**	**1·41**
1	5,713	16·58	–	83·42	5,713	5,713	–	21,525	3·77	3·77
2	28,745	10·10	2·50	87·40	28,745	57,490	3,079	136,781	4·76	2·38
3	32,737	13·74	6·75	79·51	33,394	98,211	7,548	177,599	5·43	1·81
4	29,606	9·80	10·78	79·42	31,494	118,424	9,500	175,535	5·93	1·48
5	21,608	11·83	13·69	74·48	24,107	108,040	9,193	136,558	6·32	1·26
6	13,558	39·47	19·94	40·59	16,131	81,348	7,758	89,562	6·61	1·10
7	7,961	13·48	54·10	32·42	9,912	55,727	6,041	54,821	6·89	0·08
8	4,359	17·85	63·59	18·56	5,759	34,872	4,391	30,963	7·10	0·89
9	2,401	8·91	76·68	14·41	3,284	21,609	3,570	17,721	7·38	0·82
10	1,296	8·33	81·71	9·96	1,968	12,960	2,357	9,971	7·69	0·77
11	733	3·41	87·72	8·87	1,212	8,063	1,627	5,867	8·00	0·73
12	380	6·32	87·10	6·58	706	4,560	1,083	3,225	8·49	0·71
13	188	3·72	89·36	6·92	409	2,444	596	1,715	9·12	0·70
14	105	2·86	95·24	1·90	272	1,470	373	943	8·98	0·64
15	62	–	93·55	6·45	181	930	259	631	10·18	0·68
16 and over	86	–	94·19	5·81	303	1,516	351	988	11·49	0·65
WINNIPEG, MAN.										
Total	**48,294**	**18·86**	**25·09**	**56·05**	**52,398**	**210,980**	**19,807**	**251,098**	**5·20**	**1·19**
1	1,883	40·63	–	59·37	1,883	1,883	–	4,602	2·44	2·44
2	8,066	15·34	7·19	77·47	8,066	16,132	772	31,758	3·94	1·97
3	9,540	18·01	12·94	69·05	9,655	28,620	1,968	43,815	4·59	1·53
4	9,381	15·83	17·92	66·25	9,721	37,524	2,631	48,930	5·22	1·30
5	7,288	24·25	23·42	52·33	7,830	36,440	2,625	41,736	5·73	1·15
6	4,904	24·25	38·25	37·50	5,515	29,424	2,641	30,339	6·19	1·03
7	2,986	18·79	57·03	24·18	3,583	20,902	2,126	19,189	6·43	0·92
8	1,766	12·46	71·23	16·31	2,215	14,128	1,811	11,843	6·71	0·84
9	1,003	8·08	79·16	12·76	1,344	9,027	1,326	7,087	7·07	0·79
10	623	8·83	82·50	8·67	872	6,230	1,148	4,623	7·42	0·74
11	365	3·84	87·67	8·49	614	4,015	898	2,832	7·76	0·71
12	200	5·00	92·50	2·50	355	2,400	616	1,600	8·00	0·67
13	114	2·63	91·23	6·14	229	1,482	387	1,016	8·91	0·69
14	68	1·47	88·24	10·29	159	952	230	619	9·10	0·65
15	41	–	97·56	2·44	100	615	149	368	8·98	0·60
16 and over	66	3·03	93·94	3·03	257	1,206	279	741	11·23	0·67

TABLE 11. Numerical and percentage distribution of the population according to number of rooms per person, Montreal, Toronto and Winnipeg, 1931

Accommodation per Person	Persons Having Given Accommodation					
	No.			P.C.		
	Montreal, Que.	Toronto, Ont.	Winnipeg, Man.	Montreal, Que.	Toronto, Ont.	Winnipeg, Man.
Total	**785,874**	**613,377**	**210,980**	**100·00**	**100·00**	**100·00**
Living in less than 0·25 rooms per person	761	354	502	0·10	0·06	0·24
" " 0·25–0·49 rooms per person	28,590	8,587	7,047	3·64	1·40	3·34
" " 0·50–0·74 " " "	155,559	61,008	34,324	19·79	9·95	16·27
" " 0·75–0·99 " " "	133,208	78,310	33,520	16·95	12·77	15·89
" " 1·00–1·49 " " "	274,701	225,160	81,293	34·95	36·71	38·53
" " 1·50–1·99 " " "	95,728	113,900	30,028	12·18	18·57	14·23
" " 2·00–2·49 " " "	56,589	71,813	14,354	7·20	11·71	0·80
" " 2·50–2·99 " " "	19,782	19,768	4,547	2·52	3·22	2·16
" " 3·00–3·49 " " "	10,923	20,098	3,136	1·39	3·28	1·49
" " 3·50–3·99 " " "	3,981	4,757	876	0·51	0·77	0·42
" " 4·00–4·49 " " "	2,918	4,531	519	0·37	0·74	0·25
" " 4·50–4·99 " " "	453	1,380	153	0·06	0·22	0·07
" " 5·00–5·49 " " "	1,116	1,247	201	0·14	0·20	0·10
" " 5·50–5·99 " " "	86	188	34	0·01	0·03	0·02
" " 6·00–6·49 " " "	459	798	105	0·06	0·13	0·05
" " 6·50–6·99 " " "	41	48	–	0·01	0·01	–
" " 7·00–7·49 " " "	212	257	29	0·03	0·04	0·01
" " 7·50–7·99 " " "	28	32	6	[1]	0·01	[1]
" " 8·00–8·49 " " "	110	251	15	0·01	0·04	0·01
" " 8·50–8·99 " " "	6	4	2	[1]	[1]	[1]
" " 9·00–9·49 " " "	46	110	9	0·01	0·02	[1]
" " 9·50–9·99 " " "	2	2	–	[1]	[1]	–
" " 10·00 and over " "	78	144	18	0·01	0·02	[1]
Not stated	497	630	262	0·06	0·10	0·12

[1] Less than 0·01 per cent.

TABLE 12. Numerical and percentage distribution of households, by tenure, rural and urban by size groups, Canada and provinces, 1931

Tenure	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
	NUMBER									
All households	**2,252,729**	**18,734**	**108,674**	**80,292**	**535,472**	**810,157**	**148,590**	**199,385**	**173,502**	**177,923**
Rural	1,012,014	14,475	60,832	52,776	178,294	309,048	79,074	132,202	105,772	79,541
Owners	797,812	13,474	52,216	43,390	150,562	233,527	59,829	106,546	85,470	52,798
Tenants	214,202	1,001	8,616	9,386	27,732	75,521	19,245	25,656	20,302	26,743
Urban	1,240,715	4,259	47,842	27,516	357,178	501,109	69,516	67,183	67,730	98,382
Owners	565,084	2,397	22,992	10,727	106,067	263,715	35,147	36,744	36,021	51,274
Tenants	675,631	1,862	24,850	16,789	251,111	237,394	34,369	30,439	31,709	47,108
Urban 30,000 and over	678,743	–	12,147	10,890	213,959	261,538	48,294	21,715	39,239	70,961
Owners	252,586	–	4,271	2,560	34,631	120,868	22,712	11,237	20,533	35,774
Tenants	426,157	–	7,876	8,330	179,328	140,670	25,582	10,478	18,706	35,187
Urban 1,000-30,000	463,135	3,539	33,680	16,151	116,333	217,174	15,982	20,123	15,557	24,596
Owners	249,403	1,829	17,306	7,878	53,227	127,051	9,135	10,549	8,508	13,920
Tenants	213,732	1,710	16,374	8,273	63,106	90,123	6,847	9,574	7,049	10,676
Urban under 1,000	98,837	720	2,015	475	26,886	22,397	5,240	25,345	12,934	2,825
Owners	63,095	568	1,415	289	18,209	15,796	3,300	14,958	6,980	1,580
Tenants	35,742	152	600	186	8,677	6,601	1,940	10,387	5,954	1,245

TABLE 12. Numerical and percentage distribution of households, by tenure, rural and urban by size groups, Canada and provinces, 1931—Con.

Tenure	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
					PERCENTAGE					
Rural	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Owners	78·83	93·08	85·84	82·22	84·45	75·56	75·66	80·59	80·80	66·38
Tenants	21·17	6·92	14·16	17·78	15·55	24·44	24·34	19·41	19·20	33·62
Urban	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Owners	45·55	56·28	48·06	38·99	29·70	52·63	50·56	54·69	53·18	52·12
Tenants	54·45	43·72	51·94	01·01	70·30	47·37	49·44	45·31	46·82	47·88
Urbnn 30,000 and over	100·00	–	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Owners	37·21	–	35·16	23·51	16·19	46·22	47·03	51·75	52·33	50·41
Tennnts	62·79	–	64·84	76·49	83·81	53·78	52·97	48·25	47·67	49·59
Urbnn 1,000-30,000	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Owners	53·85	51·68	51·38	48·78	45·75	58·50	57·16	52·42	54·69	56·59
Tenants	46·15	48·32	48·62	51·22	54·25	41·50	42·84	47·58	45·31	43·41
Urban under 1,000	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Owners	63·84	78·89	70·22	60·84	67·73	70·53	62·98	59·02	53·97	55·93
Tennnts	36·16	21·11	29·78	39·16	32·27	29·47	37·02	40·98	46·03	44·07

TABLE 13. Numerical and percentage distribution of households,[1] by tenure, cities of 30,000 population and over, 1931

City	Number			Percentage	
	Total	Owners	Tenants	Owners	Tenants
Urban 30,000 and over	**678,743**	**252,586**	**426,157**	**37·21**	**62·79**
Halifax, N.S.	12,147	4,271	7,876	35·16	64·84
Saint John, N.B.	10,890	2,560	8,330	23·51	76·49
Montreal, Que.	170,811	25,455	145,356	14·90	85·10
Quebec, Que.	23,043	5,829	17,214	25·30	74·70
Verdun, Que.	13,914	1,632	12,282	11·73	88·27
Three Rivers, Que.	6,191	1,715	4,476	27·70	72·30
Toronto, Ont.	149,538	69,463	80,075	46·45	53·55
Hamilton, Ont.	37,217	17,876	19,341	48·03	51·97
Ottawa, Ont.	27,658	9,746	17,912	35·24	64·76
London, Ont.	17,549	9,726	7,823	55·42	44·58
Windsor, Ont.	14,900	5,951	8,949	39·94	60·06
Kitchener, Ont.	7,189	4,070	3,119	56·61	43·39
Brantford, Ont.	7,487	4,036	3,451	53·91	46·09
Winnipeg, Man.	48,294	22,712	25,582	47·03	52·97
Regina, Sask.	12,017	6,048	5,969	50·33	49·67
Saskatoon, Sask.	9,698	5,189	4,509	53·50	46·50
Calgary, Alta.	20,371	10,526	9,845	51·67	48·33
Edmonton, Alta.	18,868	10,007	8,861	53·04	46·96
Vancouver, B.C.	60,530	30,884	29,646	51·02	48·98
Victoria, B.C.	10,431	4,890	5,541	46·88	53·12

[1] Percentages differ slightly from those on page 496 where computations are based upon private families in order to make possible a comparison with 1931 data.

TABLE 14. Households, persons and children per household, and rooms per person for specified types of households, by tenure, Canada, provinces and cities of 30,000 population and over, 1931

No	Province or City	No. of Households	P.C. of Total No. of Households (all classes)	One-Family	
				One Person	
				No.	P.C
	OWNERS				
1	**CANADA**	**1,362,896**	**60·50**	**98,076**	**7·20**
2	Prince Edward Island	15,871	84·72	1,107	6·98
3	Nova Scotia	75,208	69·21	5,211	6·93
4	New Brunswick	54,117	67·40	2,820	5·21
5	Quebec	256,629	47·93	10,229	3·99
6	Ontario	497,242	61·38	30,693	6·17
7	Manitoba	94,976	63·92	5,246	5·52
8	Saskatchewan	143,290	71·87	14,612	10·20
9	Alberta	121,491	70·02	15,825	13·02
10	British Columbia	104,072	58·49	12,333	11·85
11	**Urban 30,000 and over**	**252,586**	**37·21**	**6,910**	**2·74**
12	Halifax, N.S.	4,271	35·16	131	3·07
13	Saint John, N.B.	2,560	23·51	181	7·07
14	Montreal, Que.	25,455	14·90	559	2·20
15	Quebec, Que.	5,829	25·30	134	2·30
16	Verdun, Que.	1,632	11·73	28	1·72
17	Three Rivers, Que.	1,715	27·70	31	1·81
18	Toronto, Ont.	69,463	46·45	1,706	2·45
19	Hamilton, Ont.	17,876	48·03	476	2·66
20	Ottawa, Ont.	9,746	35·24	296	3·04
21	London, Ont.	9,726	55·42	389	4·00
22	Windsor, Ont.	5,951	39·94	174	2·92
23	Kitchener, Ont.	4,070	56·61	105	2·58
24	Brantford, Ont.	4,036	53·91	194	4·81
25	Winnipeg, Man.	22,712	47·03	248	1·09
26	Regina, Sask.	6,048	50·33	95	1·57
27	Saskatoon, Sask.	5,189	53·51	121	2·33
28	Calgary, Alta.	10,526	51·67	264	2·51
29	Edmonton, Alta.	10,007	53·04	335	3·35
30	Vancouver, B.C.	30,884	51·02	1,142	3·70
31	Victoria, B.C.	4,890	46·88	301	6·16
	TENANTS				
32	**CANADA**	**889,833**	**39·50**	**62,037**	**6·97**
33	Prince Edward Island	2,863	15·28	164	5·73
34	Nova Scotia	33,466	30·79	1,541	4·60
35	New Brunswick	26,175	32·60	1,000	3·82
36	Quebec	278,843	52·07	11,555	4·14
37	Ontario	312,915	38·62	17,357	5·55
38	Manitoba	53,614	36·08	3,967	7·40
39	Saskatchewan	56,095	28·13	7,201	12·84
40	Alberta	52,011	29·98	7,537	14·49
41	British Columbia	73,851	41·51	11,715	15·86
42	**Urban 30,000 and over**	**426,157**	**62·79**	**23,937**	**5·62**
43	Halifax, N.S.	7,876	64·84	284	3·60
44	Saint John, N.B.	8,330	76·49	325	3·00
45	Montreal, Que.	145,356	85·10	6,380	4·39
46	Quebec, Que.	17,214	74·70	482	2·80
47	Verdun, Que.	12,282	88·27	209	1·70
48	Three Rivers, Que.	4,476	72·30	61	1·36
49	Toronto, Ont.	80,075	53·55	4,007	5·00
50	Hamilton, Ont.	19,341	51·97	826	4·27
51	Ottawa, Ont.	17,912	64·76	971	5·42
52	London, Ont.	7,823	44·58	370	4·73
53	Windsor, Ont.	8,949	60·06	387	4·32
54	Kitchener, Ont.	3,119	43·39	152	4·87
55	Brantford, Ont.	3,451	46·09	174	5·04
56	Winnipeg, Man.	25,582	52·97	1,635	6·39
57	Regina, Sask.	5,969	49·67	491	8·23
58	Saskatoon, Sask.	4,509	46·49	387	8·58
59	Calgary, Alta.	9,845	48·33	1,070	10·87
60	Edmonton, Alta.	8,861	46·96	1,117	12·61
61	Vancouver, B.C.	29,646	48·98	3,553	11·98
62	Victoria, B.C.	5,541	53·12	1,056	19·06

TABLE 14. Households, persons and children per household, and rooms per person for specified types of households, by tenure, Canada, provinces and cities of 30,000 population and over, 1931

Households of—		Multiple-Family Households		No. of Persons per Household of—		No. of Children per Family in Households of—		No. of Rooms per Person in Households of—			
Two or More Persons								One Family of—			
No.	P.C.	No.	P.C.	One Family of Two or More Persons	Two or More Families	One Family of Two or More Persons	Two or More Families (children in family of head of household only)	One Person	Two or More Persons	Two or More Families	No.
OWNERS											
1,168,003	**85·70**	**96,817**	**7·10**	**4·71**	**6·53**	**2·47**	**1·45**	**3·90**	**1·31**	**1·08**	1
13,319	83·92	1,445	9·10	4·71	6·48	2·45	1·18	5·89	1·66	1·31	2
62,819	83·53	7,178	9·54	4·65	6·46	2·44	1·33	5·45	1·54	1·18	3
45,432	83·95	5,865	10·84	5·16	7·04	2·90	1·70	5·53	1·39	1·13	4
223,631	87·14	22,769	8·87	5·72	7·45	3·52	2·04	4·72	1·16	0·99	5
430,082	86·49	36,467	7·33	4·19	5·96	1·95	1·09	5·32	1·64	1·25	6
83,848	88·28	5,882	6·19	4·84	6·59	2·57	1·52	2·95	1·05	0·90	7
121,575	84·84	7,103	4·96	5·01	6·63	2·75	1·59	2·35	0·91	0·78	8
100,212	82·49	5,454	4·49	4·65	6·38	2·43	1·41	2·21	0·98	0·82	9
87,085	83·68	4,654	4·47	3·94	5·92	1·78	1·10	2·84	1·31	1·02	10
226,136	**89·53**	**19,540**	**7·73**	**4·28**	**6·15**	**2·00**	**1·21**	**5·22**	**1·50**	**1·17**	11
3,657	85·62	483	11·31	4·49	6·64	2·09	1·38	5·19	1·60	1·14	12
2,177	85·04	202	7·89	4·09	5·59	1·84	0·89	5·80	1·78	1·33	13
23,079	90·66	1,817	7·14	5·01	6·33	2·75	1·39	5·35	1·36	1·20	14
5,254	90·14	441	7·56	5·81	7·19	3·46	1·71	4·92	1·25	1·07	15
1,516	92·89	88	5·39	4·74	5·31	2·62	1·11	4·82	1·24	1·21	16
1,514	88·28	170	9·91	5·73	7·42	3·48	2·21	5·00	1·15	1·00	17
61,257	88·19	6,500	9·36	4·10	5·96	1·76	1·09	5·91	1·64	1·24	18
15,913	89·02	1,487	8·32	4·05	6·03	1·80	1·18	5·86	1·61	1·14	19
8,545	87·68	905	9·28	4·38	6·30	2·09	1·30	6·28	1·76	1·26	20
8,593	88·35	744	7·65	3·77	5·57	1·56	0·87	6·13	1·80	1·32	21
5,170	87·03	598	10·05	4·25	5·97	1·97	1·18	5·67	1·52	1·19	22
3,651	89·71	314	7·71	4·30	6·21	2·01	1·28	5·58	1·58	1·15	23
3,544	87·81	298	7·38	3·88	5·52	1·68	0·92	5·97	1·75	1·29	24
20,657	90·95	1,807	7·96	4·52	6·70	2·17	1·45	5·11	1·36	1·05	25
5,651	93·44	302	4·99	4·52	6·88	2·15	1·52	3·94	1·24	1·00	26
4,773	91·98	295	5·69	4·40	6·79	2·07	1·37	3·52	1·34	1·00	27
9,620	91·39	642	6·10	4·17	6·40	1·91	1·39	4·52	1·41	1·05	28
9,208	02·02	464	4·64	4·24	6·56	2·05	1·45	4·00	1·32	1·03	20
28,050	00·82	1,692	5·48	3·89	5·79	1·71	1·07	3·79	1·42	1·12	30
4,298	87·80	291	5·95	3·57	5·52	1·44	0·80	5·44	1·71	1·29	31
TENANTS											
782,198	**87·90**	**45,598**	**5·13**	**4·37**	**6·86**	**2·13**	**1·67**	**2·64**	**1·16**	**0·91**	32
2,533	88·47	166	5·80	4·66	7·14	2·39	1·77	3·71	1·32	0·99	33
29,925	89·42	2,000	5·98	4·71	7·00	2·53	1·98	3·23	1·14	0·89	34
23,707	90·57	1,468	5·61	4·62	7·06	2·42	2·03	3·62	1·25	0·94	35
252,217	00·45	15,071	5·41	4·71	6·90	2·49	1·81	3·10	1·11	0·89	36
277,518	88·69	18,040	5·76	4·13	6·77	1·90	1·57	3·18	1·30	0·97	37
46,934	87·54	2,713	5·06	4·34	7·46	2·06	1·62	2·34	1·03	0·85	38
47,078	83·92	1,816	3·24	4·47	6·73	2·22	1·64	2·11	0·94	0·77	39
42,585	82·40	1,616	3·11	4·11	6·53	1·87	1·43	1·99	1·00	0·81	40
50,428	80·47	2,708	3·67	3·83	6·63	1·57	1·27	2·04	1·12	0·86	41
375,445	**88·10**	**26,775**	**6·28**	**4·25**	**6·97**	**1·99**	**1·62**	**2·56**	**1·18**	**0·92**	42
6,055	88·31	637	8·09	4·41	7·13	2·17	1·89	2·62	1·07	0·82	43
7,513	90·19	492	5·91	4·28	6·45	2·10	1·58	3·90	1·33	1·02	44
120,913	89·38	9,063	6·23	4·54	6·83	2·29	1·66	2·98	1·15	0·91	45
15,766	01·59	966	5·61	5·11	7·29	2·86	2·07	3·36	1·05	0·85	46
11,593	04·39	480	3·91	4·19	6·23	2·07	1·57	3·55	1·12	0·83	47
4,131	02·29	284	6·35	5·24	7·37	3·05	2·53	3·70	1·00	0·77	48
69,974	87·30	6,094	7·61	3·93	7·09	1·63	1·49	2·86	1·24	0·95	49
17,109	88·46	1,406	7·27	4·05	6·57	1·79	1·53	2·96	1·27	0·95	50
15,578	86·07	1,363	7·61	4·33	7·13	2·09	1·86	3·24	1·37	0·99	51
6,910	88·44	534	6·83	3·96	6·31	1·72	1·33	3·30	1·47	1·07	52
7,975	89·12	587	6·56	4·03	6·83	1·77	1·64	2·74	1·25	0·93	53
2,817	90·32	150	4·81	3·99	6·86	1·75	1·73	2·43	1·17	0·88	54
3,100	89·83	177	5·13	4·08	6·63	1·87	1·69	2·91	1·37	0·98	55
22,250	86·98	1,697	6·63	4·04	8·09	1·69	1·67	2·04	1·06	0·84	56
5,239	87·77	239	4·00	4·05	7·77	1·73	1·97	1·56	1·00	0·79	57
3,899	86·47	223	4·95	4·14	7·23	1·80	1·55	1·49	1·05	0·84	58
8,365	84·97	410	4·16	3·80	6·81	1·54	1·44	1·76	1·08	0·84	59
7,394	83·44	350	3·95	3·98	6·86	1·75	1·53	1·60	1·08	0·87	60
24,691	83·20	1,402	4·73	3·74	6·72	1·49	1·24	2·00	1·15	0·90	61
4,264	76·95	221	3·99	3·77	6·25	1·54	1·21	1·96	1·32	1·08	62

TABLE 15. Percentage owners form of each age group and percentage age distribution of owners, Canada and provinces, rural and urban, 1931

Province	P.C. Owners in Age Group						P.C. Distribution by Age Groups					
	All Ages	Under 25	25–34	35–44	45–54	55 and over	All Ages	Under 25	25–34	35–44	45–54	55 and over
RURAL												
CANADA	**73·95**	**37·54**	**54·44**	**72·57**	**82·12**	**85·66**	**100·00**	**1·89**	**14·05**	**23·68**	**25·13**	**35·25**
Prince Edward Island	85·50	40·09	64·19	84·25	91·78	93·27	100·00	1·27	10·77	20·23	22·12	45·61
Nova Scotia	78·62	25·25	50·25	73·10	85·86	90·77	100·00	0·98	8·96	18·18	22·76	49·12
New Brunswick	74·46	27·02	50·93	73·76	83·80	86·37	100·00	1·38	12·17	22·10	24·06	40·29
Quebec	77·34	41·86	61·75	79·16	87·43	84·30	100·00	2·07	16·92	23·92	23·19	33·90
Ontario	71·16	26·83	45·96	67·22	79·72	86·13	100·00	1·20	11·79	21·82	24·19	41·00
Manitoba	71·68	39·40	63·39	70·56	78·93	83·20	100·00	1·85	14·16	26·27	25·98	31·75
Saskatchewan	76·65	45·15	60·51	77·69	85·85	86·12	100·00	2·59	16·23	28·12	28·67	24·39
Alberta	77·34	53·56	64·46	77·57	84·90	87·23	100·00	3·40	18·52	27·19	26·49	24·40
British Columbia	64·19	34·09	44·32	69·43	69·09	78·81	100·00	2·13	11·58	21·39	28·35	36·65
URBAN												
CANADA	**42·57**	**6·77**	**18·77**	**38·40**	**50·80**	**61·20**	**100·00**	**0·52**	**8·74**	**23·67**	**28·24**	**38·83**
Prince Edward Island	61·49	9·83	23·76	42·22	57·54	68·09	100·00	0·70	6·95	17·63	23·39	61·33
Nova Scotia	44·16	6·54	18·33	37·64	60·93	64·78	100·00	0·61	7·51	20·96	26·07	44·85
New Brunswick	36·01	4·37	13·02	28·51	41·03	55·27	100·00	0·45	6·45	19·61	25·52	47·97
Quebec	27·86	4·38	11·52	24·17	33·81	44·76	100·00	0·50	9·60	23·18	26·59	40·13
Ontario	48·79	6·08	21·04	43·54	57·19	69·37	100·00	0·40	8·19	22·77	26·78	41·86
Manitoba	46·93	7·33	20·88	45·90	56·40	61·41	100·00	0·46	7·96	26·84	32·80	31·94
Saskatchewan	62·69	12·41	30·14	50·84	62·05	71·02	100·00	0·88	10·92	28·51	31·00	28·69
Alberta	60·89	12·30	27·20	49·06	61·73	67·48	100·00	0·92	10·19	27·56	32·84	28·49
Britisb Columbia	49·26	10·98	27·64	45·89	56·02	61·49	100·00	0·63	8·83	23·25	32·61	34·68

TABLE 16. Percentage owners form of total urban household heads and percentage owners form of each occupational group, Canada and provinces, 1931

Province	P.C. Owners of Total Urban Household Heads[1]	P.C. Owners in Occupational Group				
		Employer	Own Account	Wage-Earner	No Occupation	Income
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
CANADA	**45·55**	**66·43**	**66·02**	**38·44**	**49·03**	**71·15**
Prince Edward Island	56·28	74·34	67·93	44·22	55·43	78·85
Nova Scotia	48·06	77·44	65·74	39·12	56·28	69·79
New Brunswick	38·99	67·64	53·25	29·46	48·44	62·31
Quebec	29·70	56·04	44·68	22·13	31·31	62·74
Ontario	52·63	72·12	59·93	45·45	60·58	76·63
Manitoba	60·56	69·80	64·27	47·14	49·63	67·20
Saskatchewan	54·69	74·00	66·26	46·03	61·20	78·00
Alberta	53·18	72·49	61·15	47·63	65·35	72·70
Britisb Columbia	52·12	66·76	52·04	49·72	50·22	61·91

[1] Percentages differ from those in Tables 15, 18 and 19 wbicb are based on private families only.

TABLE 17. Number of homes and percentage distribution according to occupational status of head and tenure of home, Canada, provinces and cities of 30,000 population and over, 1931

Province or City	Total Homes	Employer			Own Account			Wage-Earner			No Occupation			Income		
		Total	Owned	Rented	Total	Owned	Rented	Total	Owned	Rented	Total	Owned	Rented	Total	Owned	Rented
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
CANADA	**1,240,715**	**5·94**	**3·95**	**1·99**	**10·76**	**6·03**	**4·73**	**67·19**	**25·83**	**41·36**	**8·11**	**4·05**	**4·06**	**8·00**	**5·69**	**2·31**
Prince Edward Island	4,259	8·88	6·60	2·28	16·11	10·94	5·17	51·77	22·89	28·88	10·59	5·87	4·72	12·65	9·98	2·67
Nova Scotia	47,842	5·14	3·98	1·16	10·84	7·13	3·71	66·10	25·86	40·24	10·47	5·89	4·58	7·45	5·20	2·25
New Brunswick	27,516	5·59	3·78	1·81	11·03	5·87	5·16	64·82	19·09	45·73	9·58	4·64	4·94	8·98	5·59	3·39
Quebec	357,178	6·95	3·89	3·06	8·79	3·93	4·86	69·97	15·48	54·49	8·19	2·56	5·63	6·10	3·83	2·27
Ontario	501,109	5·35	3·86	1·49	10·06	6·03	4·03	66·48	30·21	36·27	8·43	5·11	3·32	9·68	7·42	2·26
Manitoba	69,516	5·12	3·57	1·55	11·24	6·10	5·14	69·52	32·77	36·75	7·80	3·87	3·93	6·32	4·25	2·07
Saskatchewan	67,183	7·13	5·28	1·85	17·32	11·48	5·84	62·77	28·89	33·88	5·47	3·35	2·12	7·31	5·70	1·61
Alberta	67,730	5·75	4·17	1·58	15·46	9·45	6·01	66·29	31·57	34·72	6·33	3·50	2·83	6·17	4·49	1·68
British Columbia	98,382	5·57	3·72	1·85	13·00	6·77	6·23	64·64	32·14	32·50	7·68	3·86	3·82	9·11	5·64	3·47
Urban 30,000 and over	**678,743**	**5·13**	**2·89**	**2·24**	**8·97**	**3·87**	**5·10**	**71·39**	**23·57**	**47·82**	**8·30**	**3·24**	**5·06**	**6·21**	**3·64**	**2·57**
Halifax, N.S.	12,147	4·75	3·32	1·43	8·50	4·36	4·14	69·33	18·99	50·34	9·99	4·18	5·81	7·43	4·31	3·12
Saint John, N.B.	10,890	5·00	2·74	2·26	9·72	3·46	6·26	64·87	9·10	55·77	10·68	3·67	7·01	9·73	4·53	5·20
Montreal, Que.	170,811	5·62	1·84	3·78	7·33	1·37	5·96	73·74	8·44	65·30	8·98	1·50	7·48	4·33	1·76	2·57
Quebec, Que.	23,043	7·26	3·79	3·47	6·74	2·80	3·94	71·77	13·38	58·39	9·99	3·20	6·79	4·24	2·12	2·12
Verdun, Que.	13,914	2·17	0·90	1·27	4·18	0·81	3·37	84·54	7·90	76·64	6·29	0·96	5·33	2·82	1·15	1·67
Three Rivers, Que.	6,191	6·14	3·20	2·94	5·93	2·49	3·44	78·10	17·66	60·44	6·67	2·24	4·43	3·16	2·11	1·05
Toronto, Ont.	149,538	5·38	3·50	1·88	9·49	4·77	4·72	69·68	29·32	40·36	9·11	4·71	4·40	6·34	4·15	2·19
Hamilton, Ont.	37,217	4·22	3·11	1·11	7·33	3·81	3·52	74·28	32·40	41·88	5·91	3·27	2·64	8·26	5·44	2·82
Ottawa, Ont.	27,658	4·75	3·03	1·72	7·60	2·92	4·68	70·57	21·12	49·45	8·13	3·28	4·85	8·95	4·88	4·07
London, Ont.	17,549	4·60	3·42	1·18	8·53	5·07	3·46	66·81	33·35	33·46	9·56	5·74	3·82	10·50	7·85	2·65
Windsor, Ont.	14,900	4·01	2·39	1·62	8·98	3·86	5·12	74·52	26·21	48·31	6·93	3·30	3·63	5·56	4·18	1·38
Kitchener, Ont.	7,189	4·83	3·95	0·88	8·36	5·17	3·19	72·87	37·15	35·72	7·11	4·61	2·50	6·83	5·73	1·10
Brantford, Ont.	7,487	3·91	2·86	1·05	7·56	4·78	2·78	70·88	33·58	37·30	9·22	6·28	2·94	8·43	6·41	2·02
Winnipeg, Man.	48,294	4·54	3·10	1·44	10·69	5·24	5·45	72·29	32·74	39·55	7·52	3·18	4·34	4·96	2·77	2·19
Regina, Sask.	12,017	3·60	2·50	1·10	10·54	6·22	4·32	76·38	36·05	40·33	5·24	2·70	2·54	4·24	2·86	1·38
Saskatoon, Sask.	9,698	6·28	4·55	1·73	10·26	6·11	4·15	74·19	37·29	36·90	5·06	2·79	2·27	4·21	2·77	1·44
Calgary, Alta.	20,371	4·18	2·82	1·36	10·76	5·83	4·93	73·81	36·42	37·39	6·62	3·39	3·23	4·63	3·22	1·41
Edmonton, Alta.	18,868	4·18	2·91	1·27	11·43	6·50	4·93	71·83	36·57	35·26	6·28	3·18	3·10	6·28	3·88	2·40
Vancouver, B.C.	60,530	5·54	3·58	1·96	12·96	6·10	6·86	64·99	32·62	32·37	7·77	3·57	4·20	8·74	5·15	3·59
Victoria, B.C.	10,431	5·33	3·42	1·91	10·81	5·43	5·38	57·46	23·78	33·68	10·00	4·62	5·38	16·40	9·62	6·78

TABLE 18. Percentage owners form of family heads, by conjugal condition of head, rural and urban, Canada and provinces, 1931

Province	P.C. Owners of Heads of—					
	Total Families	Families with—				
		Two Married Heads	One Married Head	Widowed Head	Divorced Head	Single Head
RURAL						
CANADA	**73·95**	**73·92**	**56·09**	**78·96**	**61·78**	**76·52**
Prince Edward Island	85·50	84·90	65·76	89·55	55·56	92·98
Nova Scotia	78·62	77·41	57·68	84·42	64·49	90·43
New Brunswick	74·46	73·88	52·90	78·83	59·38	85·55
Quebec	77·34	77·88	62·07	77·45	62·50	74·94
Ontario	71·16	70·11	53·38	78·84	56·84	78·78
Manitoba	71·68	72·25	55·58	76·74	69·57	68·86
Saskatchewan	76·65	77·10	60·21	79·92	63·52	77·93
Alberta	77·34	77·82	63·54	80·28	72·13	78·94
British Columbia	64·19	65·23	45·75	73·52	51·93	63·70
URBAN						
CANADA	**42·57**	**42·96**	**26·71**	**48·72**	**23·42**	**35·73**
Prince Edward Island	51·49	50·35	34·58	58·82	20·00	57·92
Nova Scotia	44·16	42·92	28·87	53·96	30·77	50·88
New Brunswick	36·01	34·04	22·28	45·12	17·39	49·08
Quebec	27·86	27·98	17·63	31·26	8·43	23·32
Ontario	48·79	48·24	29·49	57·95	25·46	48·95
Manitoba	46·93	49·78	23·29	47·13	17·55	23·08
Saskatchewan	52·69	55·47	37·24	60·02	40·76	29·19
Alberta	50·89	54·58	32·39	55·37	30·82	25·28
British Columbia	49·26	54·32	23·73	49·62	22·28	27·54

TABLE 19. Percentage owners form of family heads, by birthplace of head, rural and urban, Canada and provinces, 1931

Province	P.C. Owners of—					
	Total Family Heads	Family Heads Born in—				
		Canada	British Isles	United States	Continental Europe	Other Countries
RURAL						
CANADA	**73·95**	**75·39**	**68·34**	**71·38**	**74·96**	**41·01**
Prince Edward Island	85·50	85·75	75·12	77·70	37·50	100·00
Nova Scotia	78·62	79·51	62·22	65·23	67·31	68·29
New Brunswick	74·46	74·90	69·74	68·91	59·15	57·14
Quebec	77·34	77·73	61·27	69·29	67·83	57·58
Ontario	71·16	74·40	60·72	61·47	60·23	52·73
Manitoba	71·68	68·89	69·57	66·40	78·30	56·05
Saskatchewan	76·65	73·99	70·48	73·50	79·41	76·73
Alberta	77·34	75·36	76·93	75·20	80·88	61·26
British Columbia	64·19	66·37	67·42	65·35	60·18	32·82
URBAN						
CANADA	**42·57**	**42·71**	**43·66**	**39·65**	**42·03**	**22·84**
Prince Edward Island	51·40	51·79	49·40	40·26	38·46	53·57
Nova Scotia	44·16	45·97	35·17	37·52	46·67	36·68
New Brunswick	36·01	36·90	25·89	34·91	36·10	30·88
Quebec	27·86	30·84	15·16	21·59	17·12	10·14
Ontario	48·79	51·83	45·04	43·19	43·28	23·94
Manitoba	46·93	43·88	47·01	36·61	53·36	22·52
Saskatchewan	52·69	49·65	54·26	49·07	59·72	46·31
Alberta	50·89	48·98	53·24	47·43	54·31	33·53
British Columbia	49·26	49·36	52·97	43·54	49·14	17·42

TABLE 20. Households, private families, persons, lodgers, persons and children in families of heads of households, persons per household and rooms per person, in hotels, rooming houses, etc., Canada and provinces, 1931

Province	Households	Private Families	Persons	Lodgers	Persons in Families of Heads of Households	Children in Families of Heads of Households	Persons per Household	Rooms per Person
TOTAL								
CANADA	**13,995**	**15,547**	**160,484**	**59,513**	**36,275**	**16,570**	**11·47**	**1·04**
Prince Edward Island	49	78	822	482	139	62	16·78	1·21
Nova Scotia	379	455	6,628	1,314	864	340	17·49	0·98
New Brunswick	269	341	4,192	1,354	894	452	15·58	1·25
Quebec	2,773	3,537	31,150	11,860	10,612	5,844	11·23	1·16
Ontario	3,972	4,325	46,351	14,964	10,620	4,876	11·67	1·00
Manitoba	951	1,005	12,118	4,186	2,262	1,020	12·74	0·94
Saskatchewan	1,045	1,075	10,579	2,616	2,483	1,031	10·12	1·22
Alberta	1,262	1,217	11,759	4,255	2,811	1,263	9·32	1·17
British Columbia	3,295	3,514	36,885	18,482	5,590	1,682	11·19	0·89
HOTELS								
CANADA	**3,768**	**5,064**	**42,949**	**19,364**	**12,408**	**5,984**	**11·40**	**2·64**
Prince Edward Island	19	26	276	144	66	28	14·53	2·05
Nova Scotia	142	208	1,456	537	383	146	10·25	2·98
New Brunswick	116	160	1,386	571	411	207	11·95	2·48
Quebec	1,025	1,312	10,544	3,348	4,498	2,624	10·29	2·55
Ontario	1,068	1,423	10,462	4,769	3,167	1,328	9·80	3·01
Manitoba	230	310	2,699	1,263	726	341	11·73	2·62
Saskatchewan	345	450	3,392	1,430	1,026	459	9·83	3·16
Alberta	342	459	4,277	1,390	900	361	12·51	2·37
British Columbia	481	716	8,457	5,912	1,231	490	17·58	2·21
ROOMING HOUSES								
CANADA	**2,807**	**4,151**	**48,953**	**40,145**	**7,358**	**2,977**	**17·44**	**0·71**
Prince Edward Island	17	39	409	338	56	30	24·06	0·65
Nova Scotia	62	102	999	777	173	74	16·11	0·80
New Brunswick	63	92	1,064	783	238	129	16·89	0·88
Quebec	653	1,031	11,206	8,508	2,022	910	17·16	0·65
Ontario	749	1,143	12,479	10,195	2,103	855	16·66	0·74
Manitoba	234	344	3,722	2,923	670	285	15·91	0·76
Saskatchewan	101	151	1,508	1,186	285	120	14·93	0·69
Alberta	193	256	3,416	2,865	513	210	17·70	0·70
British Columbia	735	993	14,150	12,570	1,298	364	19·25	0·71
OTHER HOUSEHOLDS (INCLUDING INSTITUTIONS)								
CANADA	**7,420**	**6,332**	**68,582**	**4**	**16,509**	**7,609**	**9·24**	**0·27**
Prince Edward Island	13	13	137	–	17	4	10·54	1·19
Nova Scotia	175	145	4,173	–	308	120	23·85	0·32
New Brunswick	90	89	1,742	–	245	116	19·36	0·49
Quebec	1,095	1,194	9,400	4	4,092	2,310	8·58	0·21
Ontario	2,155	1,759	23,410	–	5,350	2,693	10·86	0·25
Manitoba	487	351	5,697	–	866	394	11·70	0·25
Saskatchewan	599	474	5,679	–	1,172	452	9·48	0·21
Alberta	727	502	4,066	–	1,398	692	5·59	0·30
British Columbia	2,079	1,805	14,278	–	3,061	828	6·87	0·30

TABLE 21. Individual lodgers and lodging families, by type of household and tenure, rural and urban, Canada and provinces, and cities of 30,000 population and over, 1931

No.	Province or City	No. of Individual Lodgers Living in—		No. of Lodging Families Living in—	
		Owned Homes	Rented Homes	Owned Homes	Rented Homes
1	**CANADA**	**243,472**	**252,621**	**101,459**	**49,625**
2	Prince Edward Island	2,655	861	1,478	176
3	Nova Scotia	14,197	7,984	7,508	2,143
4	New Brunswick	10,053	5,995	6,116	1,552
5	Quebec	38,466	76,197	24,071	16,172
6	Ontario	105,694	93,286	38,214	19,681
7	Manitoba	16,874	17,717	6,209	3,209
8	Saskatchewan	19,679	12,440	7,327	1,912
9	Alberta	17,648	13,869	5,652	1,742
10	British Columbia	18,206	24,272	4,884	3,038
11	**Rural**	**100,029**	**37,227**	**58,611**	**7,964**
12	Prince Edward Island	1,860	167	1,235	29
13	Nova Scotia	8,070	1,363	5,150	342
14	New Brunswick	6,926	1,397	5,011	429
15	Quebec	17,042	3,796	15,466	917
16	Ontario	32,606	13,822	16,269	3,005
17	Manitoba	7,088	2,883	3,595	726
18	Saskatchewan	9,719	2,962	5,762	972
19	Alberta	9,028	3,972	3,920	610
20	British Columbia	7,690	6,865	2,203	934
21	**Urban**	**143,443**	**215,394**	**42,848**	**41,661**
22	Prince Edward Island	795	694	243	147
23	Nova Scotia	6,127	6,621	2,358	1,801
24	New Brunswick	3,127	4,598	1,105	1,123
25	Quebec	21,424	72,401	8,605	15,255
26	Ontario	73,088	79,464	21,945	16,676
27	Manitoba	9,786	14,834	2,614	2,483
28	Saskatchewan	9,960	9,478	1,565	940
29	Alberta	8,620	9,897	1,732	1,132
30	British Columbia	10,516	17,407	2,681	2,104
	Cities of 30,000 population and over—				
31	Halifax, N.S.	1,555	2,532	504	703
32	Saint John, N.B.	692	2,272	219	514
33	Montreal, Que.	5,131	48,739	1,994	9,824
34	Quebec, Que.	1,406	4,809	492	1,051
35	Verdun, Que.	249	2,156	96	503
36	Three Rivers	338	891	183	298
37	Toronto, Ont.	23,155	34,571	7,039	7,013
38	Hamilton, Ont.	5,256	6,591	1,578	1,513
39	Ottawa, Ont.	2,620	6,257	956	1,482
40	London, Ont.	2,542	2,579	788	570
41	Windsor, Ont.	1,830	2,994	644	637
42	Kitchener, Ont.	1,230	973	328	160
43	Brantford, Ont.	948	905	312	186
44	Winnipeg, Man.	7,019	12,788	1,949	2,155
45	Regina, Sask.	2,217	2,431	316	269
46	Saskatoon, Sask.	1,773	2,020	329	249
47	Calgary, Alta.	2,994	3,680	681	462
48	Edmonton, Alta.	2,118	2,842	501	388
49	Vancouver, B.C.	6,028	11,606	1,780	1,583
50	Victoria, B.C.	889	1,906	306	242

TABLE 21. Individual lodgers and lodging families, by type of household and tenure, rural and urban, Canada and provinces, and cities of 30,000 population and over, 1931

Households with Individual Lodgers						Households with Lodging Families						No.
No.		P.C. with More than One Lodger		P.C. of Total Households		No.		P.C. with More than One Lodging Family		P.C. of Total Households		
Owners	Tenants	Owners	Tenants	Owners	Tenants	Owners	Tenants	Owners	Tenants	Owners	Tenants	
181,309	**164,851**	**21·65**	**32·04**	**13·30**	**17·40**	**96,817**	**45,598**	**4·48**	**7·31**	**7·10**	**5·12**	1
2,062	522	18·33	31·61	12·99	18·23	1,445	166	2·21	5·42	9·10	5·80	2
10,768	5,305	21·03	28·24	14·32	15·85	7,178	2,000	4·39	6·35	9·54	5·98	3
7,805	4,060	19·69	26·45	14·42	15·51	5,865	1,468	4·02	5·38	10·84	5·61	4
29,917	47,253	18·74	31·05	11·66	16·95	22,769	15,071	5·45	6·26	8·87	6·40	5
76,859	57,744	23·79	31·63	15·46	18·45	36,467	18,040	4·51	7·67	7·33	5·77	6
12,263	9,946	22·56	35·99	12·91	18·55	5,882	2,713	4·76	12·97	6·19	5·06	7
15,049	8,160	19·06	28·65	10·50	14·55	7,103	1,816	3·04	4·79	4·96	3·24	8
13,227	8,501	20·08	31·70	10·89	16·34	5,454	1,616	2·90	6·31	4·49	3·11	9
13,359	13,360	21·72	36·70	12·84	18·09	4,654	2,708	4·58	9·19	4·47	3·67	10
82,651	**25,767**	**14·88**	**24·94**	**10·36**	**12·03**	**56,451**	**7,617**	**3·66**	**3·78**	**7·08**	**3.66**	11
1,556	104	13·88	26·92	11·55	10·39	1,213	29	1·81	–	9·00	2·90	12
6,671	984	15·50	21·34	12·78	11·42	4,969	330	3·50	3·64	9·52	3·83	13
5,665	1,043	16·36	21·19	13·06	11·11	4,830	415	3·58	3·37	11·13	4·42	14
14,473	2,770	13·30	21·44	9·61	9·99	14,756	878	4·70	4·33	9·80	3·17	15
26,495	9,666	15·62	24·72	11·35	12·80	15,695	2,912	3·50	3·12	6·72	3·86	16
5,882	2,131	15·18	20·74	9·83	11·07	3,451	705	4·06	2·84	5·77	3·66	17
8,558	2,320	10·63	17·24	8·03	9·04	5,631	945	2·29	2·86	5·29	3·68	18
7,464	2,642	14·72	28·27	8·73	13·01	3,814	585	2·10	2·91	4·46	2·88	19
5,887	4,107	19·67	33·99	11·15	15·36	2,092	818	5·07	8·44	3·96	3·06	20
98,658	**129,084**	**27·33**	**33·46**	**17·46**	**19·11**	**40,366**	**37,981**	**6·62**	**8·01**	**7·14**	**5·62**	21
506	418	32·02	32·78	21·11	22·45	232	137	4·31	6·57	9·68	7·36	22
4,097	4,321	30·02	29·81	17·82	17·39	2,209	1,670	6·38	6·89	9·61	6·72	23
2,140	3,017	28·50	28·27	19·95	17·97	1,035	1,053	6·09	6·17	9·65	6·27	24
15,444	44,483	23·83	32·61	14·56	17·71	8,013	14,193	6·84	6·38	7·55	5·65	25
60,364	48,078	28·08	33·02	19·10	20·25	20,772	15,128	5·28	8·54	7·88	6·37	26
6,381	7,815	29·35	40·15	18·16	22·74	2,431	2,008	5·76	16·53	6·92	5·84	27
6,491	5,840	30·18	33·18	17·67	19·19	1,472	871	5·91	6·89	4·01	2·86	28
5,763	5,859	27·02	33·25	16·00	18·48	1,640	1,031	4·76	8·24	4·55	3·25	29
7,472	9,253	23·34	37·90	14·57	19·64	2,562	1,890	4·18	9·52	5·00	4·01	30
967	1,614	36·40	31·41	22·64	20·49	483	637	3·31	8·48	11·31	8·09	31
473	1,482	26·64	28·00	18·48	17·79	202	492	7·43	4·47	7·89	5·91	32
3,614	28,492	25·54	35·41	14·20	19·60	1,817	9,063	8·97	6·98	7·14	6·24	33
950	2,977	26·53	32·99	16·30	17·29	441	966	9·75	7·14	7·57	5·61	34
198	1,727	19·19	18·41	12·13	14·06	88	480	9·09	4·79	5·39	3·91	35
252	607	21·43	28·50	14·69	13·56	170	284	5·88	4·58	9·91	6·34	36
15,201	19,104	31·23	38·08	21·88	23·86	6,500	6,094	7·65	11·93	9·36	7·61	37
3,566	3,952	29·53	33·32	19·95	20·43	1,487	1,406	5·58	6·69	8·32	7·27	38
1,811	3,938	26·78	31·72	18·58	21·99	905	1,363	5·52	8·07	9·29	7·61	39
1,795	1,666	26·69	31·93	18·46	20·02	744	534	5·24	5·99	7·65	6·83	40
1,247	1,917	28·87	32·81	20·95	21·42	598	587	7·69	6·98	10·05	6·56	41
841	609	32·34	31·03	20·66	19·53	314	150	3·82	6·00	7·71	4·81	42
708	597	24·01	29·48	17·54	17·30	298	177	4·36	4·52	7·38	5·13	43
4,464	6,411	30·71	42·97	19·65	25·06	1,807	1,697	5·53	18·68	7·96	6·63	44
1,261	1,348	37·51	40·58	20·85	22·58	302	239	3·64	10·88	4·99	4·00	45
1,075	1,099	32·47	41·04	20·72	24·37	295	223	10·85	10·31	5·69	4·95	46
1,861	2,059	30·20	35·60	17·68	20·91	642	410	5·61	10·24	6·10	4·16	47
1,475	1,622	24·14	34·83	14·74	18·30	464	350	6·25	9·43	4·64	3·95	48
4,441	6,099	21·53	38·24	14·38	20·57	1,692	1,402	4·67	10·63	5·48	4·73	49
661	087	21·18	38·30	13·52	17·81	291	221	4·47	8·60	5·95	3·99	50

TABLE 22. Numerical and percentage distribution of urban tenant households,[1] by monthly rental paid and type of household, Canada and provinces, 1931

Monthly Rental and Type of Household	Canada	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
					NUMBER					
Total urban tenants	**530,480**	**1,419**	**19,833**	**13,465**	**204,432**	**189,410**	**26,103**	**22,210**	**22,394**	**31,214**
Paying under $10	34,328	321	4,805	1,349	11,555	8,647	1,590	2,739	1,975	1,347
$10-$15	110,597	478	6,201	3,874	45,346	32,035	5,097	6,521	5,408	5,637
16- 24	135,615	281	3,330	3,279	67,480	41,594	4,227	3,584	4,268	7,572
25- 39	154,743	242	3,710	3,482	50,497	67,194	7,237	4,878	6,541	10,962
40- 59	64,095	80	1,151	1,145	16,903	29,043	5,419	2,997	3,224	4,133
60 and over	26,116	8	422	260	11,157	9,296	2,231	806	722	1,214
Rent not specified	4,986	9	214	76	1,494	1,601	302	685	256	349
Households of one family	503,674	1,331	18,696	12,736	194,414	178,452	24,696	21,600	21,706	30,043
Paying under $10	33,304	307	4,555	1,280	11,219	8,421	1,557	2,695	1,941	1,329
$10-$15	106,881	450	5,907	3,691	43,571	31,045	4,969	6,414	5,321	5,513
16- 24	129,475	256	3,129	3,088	64,373	39,521	4,057	3,519	4,163	7,369
25- 39	144,889	227	3,436	3,266	47,243	62,509	6,778	4,726	6,282	10,422
40- 59	59,659	76	1,068	1,084	15,985	26,665	4,968	2,814	3,077	3,922
60 and over	24,602	7	397	254	10,574	8,726	2,071	758	670	1,145
Rent not specified	4,864	8	204	73	1,449	1,565	296	674	252	343
Households of two or more families	26,806	88	1,137	729	10,018	10,958	1,407	610	688	1,171
Paying under $10	1,024	14	250	69	336	226	33	44	34	18
$10-$15	3,716	28	294	183	1,775	990	128	107	87	124
16- 24	6,140	25	201	191	3,107	2,073	170	65	105	203
25- 39	9,854	15	274	216	3,254	4,685	459	152	259	510
40- 59	4,436	4	83	61	918	2,378	451	183	147	211
60 and over	1,514	1	25	6	583	570	160	48	52	69
Rent not specified	122	1	10	3	45	36	6	11	4	6
					PERCENTAGE					
Total urban tenants	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Paying under $10	6·47	22·62	24·23	10·02	5·65	4·57	6·09	12·33	8·82	4·31
$10-$15	20·85	33·69	31·27	28·77	22·18	16·91	19·53	29·36	24·15	18·06
16- 24	25·57	19·80	16·79	24·35	33·01	21·96	16·19	16·14	19·06	24·26
25- 39	29·17	17·05	18·70	25·86	24·70	35·48	27·72	21·96	29·21	35·12
40- 59	12·08	5·64	5·80	8·50	8·27	15·33	20·76	13·49	14·40	13·24
60 and over	4·92	0·56	2·13	1·93	5·46	4·91	8·55	3·63	3·22	3·89
Rent not specified	0·94	0·64	1·08	0·57	0·73	0·84	1·16	3·09	1·14	1·12
Households of one family	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Paying under $10	6·61	23·07	24·36	10·05	5·77	4·72	6·30	12·48	8·94	4·42
$10-$15	21·22	33·81	31·60	28·98	22·41	17·40	20·12	29·69	24·51	18·35
16- 24	25·71	19·23	16·74	24·25	33·11	22·14	16·43	16·29	19·18	24·53
25- 39	28·77	17·05	18·38	25·64	24·30	35·03	27·45	21·88	28·94	34·69
40- 59	11·84	5·71	5·71	8·51	8·22	14·94	20·12	13·03	14·18	13·06
60 and over	4·88	0·53	2·12	2·00	5·44	4·89	8·38	3·51	3·09	3·81
Rent not specified	0·97	0·60	1·09	0·57	0·75	0·88	1·20	3·12	1·16	1·14
Households of two or more families	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Paying under $10	3·82	15·91	21·98	9·47	3·35	2·06	2·35	7·21	4·94	1·54
$10-$15	13·86	31·82	25·86	25·10	17·72	9·04	9·10	17·54	12·64	16·59
16- 24	22·91	28·41	17·68	26·20	31·02	18·92	12·08	10·66	15·26	17·34
25- 39	36·76	17·04	24·10	29·63	32·48	42·75	32·62	24·92	37·65	46·11
40- 59	16·55	4·54	7·30	8·37	9·16	21·70	32·05	30·00	21·37	18·02
60 and over	5·65	1·14	2·20	0·82	5·82	5·20	11·37	7·87	7·56	5·89
Rent not specified	0·45	1·14	0·88	0·41	0·45	0·33	0·43	1·80	0·58	0·51

[1] Includes only households with husband and wife living together.

TABLE 23. Numerical and percentage distribution of tenant households[1], by monthly rental paid and type of household, cities of 30,000 population and over, 1931

Monthly Rental and Type of Household	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Quebec, Que.	Verdun, Que.	Three Rivers, Que.	Toronto, Ont.	Hamilton, Ont.	Ottawa, Ont.	London, Ont.
					NUMBER					
Total tenants	**6,242**	**6,410**	**114,995**	**13,916**	**10,709**	**3,950**	**61,926**	**15,791**	**13,402**	**6,182**
Paying under $10	245	361	1,139	195	26	79	488	304	110	52
$10-$15	1,327	2,014	19,896	2,227	730	976	4,565	2,026	1,206	625
16- 24	1,418	1,920	42,853	4,894	5,186	1,755	10,428	4,647	2,506	1,715
25- 39	1,977	1,369	32,415	4,198	4,403	806	24,770	6,381	5,390	2,666
40- 59	769	517	11,289	1,381	325	220	15,096	2,040	2,927	896
60 and over	382	205	6,923	890	34	72	5,940	365	1,006	283
Rent not specified	124	24	480	131	5	42	639	28	257	45
Households of one family	6,791	6,099	108,770	13,273	10,353	3,724	57,549	14,755	12,448	5,826
Paying under $10	235	350	1,102	188	25	76	478	300	105	52
$10-$15	1,272	1,938	19,146	2,146	713	914	4,458	1,966	1,150	605
16- 24	1,314	1,807	40,894	4,680	6,042	1,651	10,021	4,376	2,313	1,624
25- 39	1,790	1,290	30,007	3,984	4,231	758	22,898	5,833	4,909	2,380
40- 59	705	489	10,626	1,305	305	215	13,529	1,900	2,758	853
60 and over	359	201	6,529	844	32	69	5,536	352	964	270
Rent not specified	116	24	466	126	5	41	629	28	249	42
Households of two or more families	451	311	6,225	643	356	226	4,377	1,036	954	356
Paying under $10	10	11	37	7	1	3	10	4	5	–
$10-$15	55	76	750	81	17	62	107	60	56	20
16- 24	104	113	1,959	214	144	104	407	271	193	91
25- 39	187	79	2,408	214	172	48	1,872	548	481	186
40- 69	64	28	663	76	20	5	1,667	140	169	43
60 and over	23	4	394	46	2	3	404	13	42	13
Rent not specified	8	–	14	5	–	1	10	–	8	3
					PERCENTAGE					
Total tenants	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Paying under $10	3·92	5·63	0·99	1·40	0·24	2·00	0·79	1·92	0·82	0·84
$10-$15	21·26	31·42	17·30	16·00	6·82	24·71	7·37	12·83	9·00	10·11
16- 24	22·72	29·95	37·26	35·17	48·43	44·43	16·84	29·43	18·70	27·74
25- 39	31·67	21·36	28·19	30·17	41·11	20·41	40·00	40·41	40·22	41·51
40- 59	12·32	8·07	9·82	9·92	3·03	5·57	24·38	12·92	21·84	14·49
60 and over	6·12	3·20	6·02	6·40	0·32	1·82	9·69	2·31	7·50	4·58
Rent not specified	1·99	0·37	0·42	0·94	0·05	1·06	1·03	0·18	1·92	0·73
Households of one family	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Paying under $10	4·06	6·74	1·01	1·42	0·24	2·04	0·83	2·03	0·84	0·89
$10-$15	21·97	31·78	17·60	16·17	6·89	24·54	7·75	13·32	9·24	10·38
16- 24	22·69	29·62	37·60	35·26	48·70	44·34	17·41	29·66	18·58	27·88
25- 39	30·91	21·15	27·59	30·01	40·87	20·36	39·79	39·53	39·44	40·85
40- 69	12·17	8·02	9·77	9·83	2·94	6·77	23·51	12·88	22·16	14·64
60 and over	6·20	3·30	6·00	6·36	0·31	1·85	9·62	2·39	7·74	4·64
Rent not specified	2·00	0·39	0·43	0·95	0·05	1·10	1·09	0·19	2·00	0·72
Households of two or more families	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Paying under $10	2·22	3·54	0·59	1·09	0·28	1·33	0·23	0·39	0·52	–
$10-$15	12·20	24·44	12·05	12·60	4·78	27·43	2·44	5·79	6·87	5·62
16- 24	23·06	36·33	31·47	33·28	40·45	46·02	9·30	26·16	20·23	25·66
25- 39	41·46	25·40	38·68	33·28	48·31	21·24	42·77	62·90	50·42	52·25
40- 69	14·19	9·00	10·65	11·82	5·62	2·21	35·80	13·61	17·72	12·08
60 and over	5·10	1·29	6·33	7·15	0·56	1·33	9·23	1·25	4·40	3·65
Rent not specified	1·77	–	0·23	0·78	–	0·44	0·23	–	0·84	0·84

[1] Includes only households with husband and wife living together.

TABLE 23. Numerical and percentage distribution of tenant households[1], by monthly rental paid and type of household, cities of 30,000 population and over, 1931—Con.

Monthly Rental and Type of Household	Windsor, Ont.	Kitchener, Ont.	Brantford, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.	Victoria, B.C.
					NUMBER					
Total tenants	**7,358**	**2,613**	**2,875**	**19,204**	**4,603**	**3,372**	**7,087**	**6,252**	**19,941**	**3,309**
Paying under $10	36	80	78	586	119	60	84	325	435	77
$10-$15	414	539	667	2,912	859	538	842	1,199	2,622	715
16- 24	921	599	1,081	2,911	634	467	1,365	1,163	4,616	1,000
25- 39	3,860	1,108	846	5,562	1,227	995	2,621	2,144	7,571	1,158
40- 59	1,763	228	146	4,887	1,197	937	1,668	1,115	3,415	233
60 and over	344	43	47	2,175	524	198	429	253	1,096	70
Rent not specified	20	16	10	171	43	177	78	53	186	56
Households of one family	6,914	2,493	2,739	18,006	4,420	3,205	6,804	6,006	19,058	3,187
Paying under $10	33	79	75	572	119	58	82	316	425	77
$10-$15	410	524	639	2,838	843	526	828	1,173	2,557	688
16- 24	877	578	1,028	2,775	619	454	1,321	1,132	4,492	972
25- 39	3,619	1,038	802	5,177	1,188	944	2,517	2,031	7,150	1,100
40- 59	1,639	216	141	4,460	1,115	866	1,583	1,068	3,222	226
60 and over	317	42	45	2,016	494	185	396	234	1,030	68
Rent not specified	19	16	9	168	42	172	77	52	182	56
Households of two or more families	444	120	136	1,198	183	167	283	246	883	122
Paying under $10	3	1	3	14	–	2	2	9	10	–
$10-$15	4	15	28	74	16	12	14	26	65	27
16- 24	44	21	53	136	15	13	44	31	124	28
25- 39	241	70	44	385	39	51	104	113	421	58
40- 59	124	12	5	427	82	71	85	47	193	7
60 and over	27	1	2	159	30	13	33	19	66	2
Rent not specified	1	–	1	3	1	5	1	1	4	–
					PERCENTAGE					
Total tenants	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Paying under $10	0·49	3·06	2·71	3·05	2·59	1·78	1·19	5·20	2·18	2·33
$10-$15	5·63	20·63	23·20	15·16	18·66	15·95	11·88	19·18	13·15	21·61
16- 24	12·52	22·92	37·60	15·16	13·77	13·85	19·26	18·60	23·15	30·22
25- 39	52·46	42·40	29·43	28·96	26·66	29·51	36·98	34·29	37·97	34·99
40- 59	23·96	8·73	5·08	25·45	26·01	27·79	23·54	17·83	17·12	7·04
60 and over	4·67	1·65	1·63	11·33	11·38	5·87	6·05	4·05	5·50	2·12
Rent not specified	0·27	0·61	0·35	0·89	0·93	5·25	1·10	0·85	0·93	1·69
Households of one family	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Paying under $10	0·48	3·17	2·74	3·18	2·69	1·81	1·21	5·26	2·23	2·41
$10-$15	5·93	21·02	23·33	15·76	19·07	16·41	12·17	19·53	13·42	21·59
16- 24	12·68	23·18	37·53	15·41	14·00	14·17	19·42	18·85	23·57	30·50
25- 39	52·34	41·64	29·28	28·75	26·88	29·45	36·99	33·82	37·52	34·52
40- 59	23·71	8·66	5·15	24·77	25·23	27·02	23·26	17·78	16·91	7·09
60 and over	4·58	1·69	1·64	11·20	11·18	5·77	5·82	3·90	5·40	2·13
Rent not specified	0·28	0·64	0·33	0·93	0·95	5·37	1·13	0·86	0·95	1·76
Households of two or more families	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Paying under $10	0·68	0·83	2·21	1·17	–	1·20	0·71	3·66	1·13	–
$10-$15	0·90	12·50	20·59	6·18	8·74	7·19	4·95	10·57	7·36	22·13
16- 24	9·91	17·50	38·97	11·35	8·20	7·78	15·55	12·60	14·04	22·95
25- 30	54·28	58·34	32·35	32·14	21·31	30·54	36·75	45·93	47·68	47·54
40- 59	27·93	10·00	3·68	35·64	44·81	42·51	30·03	19·11	21·86	5·74
60 and over	6·08	0·83	1·47	13·27	16·39	7·79	11·66	7·72	7·48	1·64
Rent not specified	0·22	–	0·73	0·25	0·55	2·99	0·35	0·41	0·45	–

[1] Includes only households with husband and wife living together.

TABLE 24. Number of persons per household,[1] rooms per household and rooms per person, by monthly rental paid and type of household, cities of 30,000 population and over, 1931

Monthly Rental and Type of Household	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Quebec, Que.	Verdun, Que.	Three Rivers, Que.	Toronto, Ont.	Hamilton, Ont.	Ottawa, Ont.	London, Ont.
AVERAGE NUMBER OF PERSONS PER HOUSEHOLD										
Total tenants	4·78	4·58	4·88	5·41	4·33	5·45	4·29	4·33	4·73	4·22
Paying under $10	4·01	4·24	4·00	4·90	4·00	4·19	3·29	3·17	3·81	3·69
$10-$15	4·62	4·78	4·43	4·90	3·94	5·19	3·57	3·88	4·66	4·18
16- 24	4·95	4·73	5·00	5·37	4·24	5·63	4·12	4·52	5·16	4·37
25- 30	5·08	4·47	6·30	5·77	4·45	5·74	4·52	4·55	4·98	4·28
40- 59	4·59	4·10	4·48	5·43	4·77	5·03	4·37	3·90	4·34	3·91
60 and over	4·26	3·71	4·38	5·46	6·06	4·86	4·19	3·99	3·86	3·98
Rent not specified	3·98	4·21	3·83	4·66	2·60	3·81	3·44	3·54	3·98	3·60
Households of one family	4·57	4·46	4·75	5·30	4·25	5·32	4·06	4·15	4·52	4·07
Paying under $10	3·89	4·15	3·92	4·86	3·72	4·05	3·20	3·13	3·60	3·69
$10-$15	4·53	4·69	4·35	4·82	3·89	6·04	3·50	3·79	4·53	4·08
16- 24	4·76	4·60	4·91	5·29	4·18	5·51	4·00	4·38	4·97	4·23
25- 39	4·81	4·35	5·13	5·65	4·37	5·59	4·30	4·34	4·74	4·12
40- 59	4·35	3·90	4·29	5·21	4·66	4·97	4·03	3·65	4·15	3·75
60 and over	4·02	3·62	4·17	5·28	5·97	4·81	3·86	3·87	3·68	3·77
Rent not specified	3·75	4·21	3·73	4·50	2·60	3·71	3·38	3·54	3·90	3·38
Households of two or more families	7·41	6·96	7·20	7·75	6·47	7·60	7·40	6·85	7·46	6·70
Paying under $10	7·00	7·09	6·54	6·14	11·00	7·67	7·50	6·25	8·20	–
$10-$15	6·82	7·29	6·66	7·02	6·00	7·40	6·69	6·75	7·43	7·30
16- 24	7·25	6·86	6·96	7·15	6·56	7·57	7·08	6·65	7·48	6·78
25- 39	7·65	6·47	7·39	7·97	6·41	8·00	7·24	6·83	7·44	6·38
40- 59	7·31	7·61	7·54	9·17	6·50	7·60	7·36	7·36	7·44	7·14
60 and over	8·00	8·25	7·80	8·83	7·50	6·00	8·81	7·31	7·79	8·31
Rent not specified	7·25	–	7·00	6·60	–	8·00	7·00	–	6·50	6·67
AVERAGE NUMBER OF ROOMS PER HOUSEHOLD										
Total tenants	4·81	5·78	5·23	5·39	4·70	5·26	5·63	5·20	6·07	6·90
Paying under $10	2·57	3·89	3·09	3·59	3·08	3·19	2·60	2·47	2·83	3·90
$10-$15	3·43	5·05	3·95	3·78	3·68	4·33	2·91	3·62	4·07	4·62
16- 24	4·22	5·93	4·83	4·67	4·35	5·15	3·95	5·07	5·57	5·44
25- 39	5·41	6·55	6·06	6·01	5·16	6·24	5·15	5·65	6·33	6·21
40- 69	6·31	6·81	6·99	6·93	6·10	6·85	5·78	5·77	6·72	6·59
60 and over	7·14	7·12	6·72	8·47	7·32	7·94	6·56	6·98	7·11	7·22
Rent not specified	4·84	5·46	3·48	4·93	3·60	3·52	3·38	4·89	4·78	5·07
Households of one family	4·73	5·73	5·18	5·35	4·68	5·24	4·90	5·12	5·99	5·84
Paying under $10	2·54	3·86	3·05	3·57	2·96	3·25	2·51	2·46	2·62	3·90
$10-$15	3·41	5·03	3·94	3·75	3·67	4·29	2·88	3·58	4·02	4·48
16- 24	4·16	5·90	4·81	4·66	4·34	5·12	3·90	5·02	6·51	5·41
25- 39	5·35	6·50	6·02	5·97	5·14	6·21	6·06	6·58	6·25	6·16
40- 50	6·22	6·67	5·91	6·85	6·06	6·87	5·61	5·65	6·64	6·54
60 and over	7·03	7·08	6·62	8·41	7·09	7·90	6·35	6·97	7·02	7·11
Rent not specified	4·53	5·46	3·43	4·91	3·60	3·41	3·34	4·89	4·71	4·71
Households of two or more families	5·83	6·64	6·17	6·17	5·24	5·65	6·76	6·33	7·14	6·78
Paying under $10	3·10	4·73	4·19	4·14	6·00	1·67	6·80	3·75	7·20	–
$10-$15	3·85	5·54	4·30	4·43	4·06	4·04	4·07	5·15	5·14	5·65
16- 24	4·99	6·37	5·44	4·93	4·61	5·54	5·25	5·80	6·28	5·96
25- 39	5·97	7·28	6·67	6·68	5·63	6·73	6·27	6·45	7·19	6·89
40- 59	7·39	9·36	7·42	8·25	6·80	6·20	7·25	7·37	8·14	7·66
60 and over	8·91	8·75	8·45	9·63	11·00	9·00	9·45	7·31	9·29	9·38
Rent not specified	9·38	–	5·14	5·40	–	8·00	5·70	–	6·88	10·00

[1] Includes only households with husband and wife living together.

TABLE 24. Number of persons per household[1], rooms per household and rooms per person, by monthly rental paid and type of household, cities of 30,000 population and over, 1931—Con.

Monthly Rental and Type of Household	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Quebec, Que.	Verdun, Que.	Three Rivers, Que.	Toronto, Ont.	Hamilton, Ont.	Ottawa, Ont.	London, Ont.
AVERAGE NUMBER OF ROOMS PER PERSON										
Total tenants	**1·01**	**1·26**	**1·07**	**0·99**	**1·09**	**0·97**	**1·17**	**1·20**	**1·28**	**1·40**
Paying under $10	0·64	0·92	0·77	0·73	0·77	0·76	0·79	0·78	0·74	1·06
$10-$15	0·74	1·06	0·89	0·77	0·93	0·83	0·81	0·93	0·87	1·08
16- 24	0·85	1·25	0·97	0·87	1·02	0·91	0·96	1·12	1·08	1·25
25- 39	1·06	1·46	1·15	1·04	1·16	1·09	1·14	1·24	1·27	1·45
40- 59	1·37	1·66	1·34	1·28	1·28	1·36	1·32	1·48	1·55	1·69
60 and over	1·68	1·92	1·54	1·55	1·21	1·63	1·56	1·75	1·84	1·81
Rent not specified	1·22	1·30	0·91	1·06	1·38	0·93	0·98	1·38	1·20	1·41
Households of one family	1·03	1·29	1·09	1·01	1·10	0·98	1·21	1·23	1·32	1·44
Paying under $10	0·65	0·93	0·78	0·73	0·80	0·80	0·78	0·78	0·73	1·06
$10-$15	0·75	1·07	0·91	0·78	0·94	0·85	0·82	0·94	0·89	1·10
16- 24	0·87	1·28	0·98	0·88	1·04	0·93	0·97	1·15	1·11	1·28
25- 39	1·11	1·49	1·17	1·06	1·18	1·11	1·18	1·29	1·32	1·49
40- 59	1·43	1·71	1·38	1·31	1·30	1·38	1·39	1·55	1·60	1·75
60 and over	1·75	1·96	1·59	1·59	1·19	1·64	1·65	1·80	1·90	1·88
Rent not specified	1·21	1·30	0·92	1·07	1·38	0·92	0·99	1·38	1·21	1·39
Households of two or more families	0·79	0·95	0·86	0·80	0·81	0·74	0·91	0·92	0·96	1·01
Paying under $10	0·44	0·67	0·64	0·67	0·55	0·22	0·91	0·60	0·88	–
$10-$15	0·57	0·76	0·65	0·63	0·68	0·67	0·61	0·76	0·69	0·77
16- 24	0·69	0·93	0·78	0·69	0·70	0·73	0·74	0·87	0·84	0·88
25- 39	0·78	1·13	0·90	0·84	0·88	0·84	0·87	0·94	0·97	1·08
40- 59	1·01	1·23	0·98	0·90	1·05	0·82	0·98	1·00	1·09	1·06
60 and over	1·11	1·06	1·08	1·09	1·47	1·50	1·07	1·00	1·19	1·13
Rent not specified	1·29	–	0·73	0·82	–	1·00	0·81	–	1·06	1·50

Monthly Rental and Type of Household	Windsor, Ont.	Kitchener, Ont.	Brantford, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.	Victoria, B.C.
AVERAGE NUMBER OF PERSONS PER HOUSEHOLD										
Total tenants	**4·30**	**4·23**	**4·30**	**4·45**	**4·33**	**4·44**	**4·07**	**4·24**	**4·00**	**4·00**
Paying under $10	4·03	2·88	3·38	3·27	3·49	3·93	3·89	3·94	3·63	4·01
$10-$15	3·74	3·70	4·26	3·91	3·92	4·30	3·76	4·13	3·88	4·04
16- 24	4·26	4·33	4·46	4·67	4·29	4·41	3·84	4·07	3·97	4·05
25- 39	4·48	4·56	4·29	4·79	4·56	4·59	4·17	4·33	4·12	3·98
40- 59	4·13	4·14	4·10	4·44	4·42	4·64	4·15	4·32	3·85	3·86
60 and over	4·06	3·72	3·77	4·37	4·52	4·23	4·63	5·02	4·24	3·80
Rent not specified	3·35	4·69	4·00	3·51	3·53	3·48	3·36	3·40	3·18	3·64
Households of one family	4·13	4·09	4·17	4·18	4·17	4·29	3·93	4·13	3·85	3·89
Paying under $10	3·79	2·81	3·24	3·20	3·49	3·81	3·87	3·88	3·57	4·01
$10-$15	3·70	3·59	4·19	3·83	3·85	4·25	3·71	4·06	3·80	3·91
16- 24	4·11	4·26	4·30	4·52	4·20	4·31	3·75	4·00	3·90	3·98
25- 39	4·32	4·38	4·14	4·54	4·44	4·43	4·04	4·20	3·96	3·85
40- 59	3·90	3·91	3·99	4·03	4·17	4·42	3·99	4·18	3·63	3·78
60 and over	3·75	3·71	3·62	3·90	4·20	3·95	4·29	4·72	3·92	3·56
Rent not specified	3·32	4·69	4·00	3·43	3·50	3·41	3·29	3·29	3·12	3·64
Households of two or more families	7·06	7·16	6·99	8·49	8·16	7·44	7·26	7·04	7·13	6·79
Paying under $10	6·67	8·00	7·00	6·21	–	7·50	5·00	6·22	6·30	–
$10-$15	7·00	7·33	5·82	7·18	7·44	6·75	7·07	7·08	6·98	7·30
16- 24	7·25	6·29	7·55	7·70	7·93	7·85	6·55	6·90	6·70	6·64
25- 39	6·92	7·23	7·11	8·11	8·10	7·51	7·28	6·65	6·80	6·50
40- 59	7·18	8·25	7·20	8·72	7·78	7·39	7·08	7·55	7·52	6·29
60 and over	7·63	4·00	7·00	10·33	9·90	8·31	8·79	8·63	9·27	12·00
Rent not specified	4·00	–	4·00	7·67	5·00	5·80	9·00	9·00	6·00	–

[1] Includes only households with husband and wife living together.

TABLE 24. Number of persons per household,[1] rooms per household and rooms per person, by monthly rental paid and type of household, cities of 30,000 population and over, 1931—Con.

Monthly Rental and Type of Household	Windsor, Ont.	Kitchener, Ont.	Brantford, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.	Victoria, B.C.
AVERAGE NUMBER OF ROOMS PER HOUSEHOLD										
Total tenants	5·15	4·77	5·68	4·50	4·21	4·54	4·27	4·50	4·47	5 13
Paying under $10	3·31	1·95	2·95	1·95	1·78	2·47	2·64	2·72	2·73	3·71
$10-$15	3·35	3·06	4·65	2·77	2·30	3·22	2·72	3·29	3·26	4·59
16- 24	4·24	4·41	5·70	3·94	3·49	4·09	3·10	3·64	4·03	5·09
25- 30	5·25	5·57	6·33	4·85	4·47	4·78	4·46	4·97	4·77	5·47
40- 59	5·63	6·27	7·34	5·13	5·23	5·68	5·32	5·88	5·09	6·09
60 and over	6·36	7·23	7·15	6·05	5·72	5·87	6·56	7·09	6·32	5·79
Rent not specified	4·30	7·06	7·30	2·86	4·30	1-55	1·54	1·81	1·67	3·02
Households of one family	5·08	4·71	5·63	4·35	4·14	4·46	4·20	4·44	4·39	5·07
Paying under $10	3·24	1·92	2·88	1·92	1·78	2·45	2·66	2·69	2·72	3·71
$10-$15	3·34	3·02	4·60	2·76	2·39	3·22	2·71	3·26	3·23	4·52
61- 24	4·19	4·38	5·66	3·88	3·46	4·07	3·06	3·61	4·00	5·06
25- 39	5·19	5·50	6·29	4·74	4·43	4·71	4·40	4·92	4·71	5·41
40- 59	5·55	6·23	7·28	4·92	5·12	5·59	5·26	5·82	4·98	6·05
60 and over	6·21	7·29	7·09	5·77	5·61	5·69	6·45	6·94	6·10	5·47
Rent not specified	4·26	7·06	7·33	2·83	4·31	1·55	1·49	1·77	1·62	3·02
Households of two or more families	6·27	6·16	6·63	6·77	6·06	6·05	5·87	6·04	6·15	6·68
Paying under $10	4·00	4·00	4·67	2·93	–	3·00	2·00	3·56	3·10	–
$10-$15	4·75	4·60	5·86	3·43	2·69	3·08	3·64	4·65	4·45	6·30
16- 24	5·14	5·29	6·45	5·01	4·47	4·77	4·30	4·81	5·32	6·11
25-39	6·05	6·66	7·09	6·38	5·56	5·98	5·77	5·87	5·85	6·72
40- 59	6·81	7·00	9·00	7·35	6·74	6·80	6·47	7·34	6·87	7·29
60 and over	8·07	5·00	8·50	9·58	7·50	8·46	7·91	9·00	9·76	16·50
Rent not specified	5·00	–	7·00	4·33	4·00	1·60	5·00	4·00	3·75	–
AVERAGE NUMBER OF ROOMS PER PERSON										
Total tenants	1·20	1·13	1·32	1·01	0·97	1·02	1·05	1·06	1·12	1·28
Paying under $10	0·82	0·68	0·87	0·60	0·51	0·63	0·68	0·69	0·75	0·93
$10-$15	0·90	0·83	1·09	0·71	0·61	0·75	0·72	0·80	0·84	1·13
16- 24	1·00	1·02	1·28	0·84	0·81	0·93	0·81	0·89	1·02	1·26
25- 39	1·17	1·22	1·48	1·01	0·98	1·04	1·07	1·15	1·16	1·38
40- 59	1·37	1·51	1·79	1·16	1·18	1·22	1·28	1·36	1·32	1·58
60 and over	1·57	1·94	1·90	1·38	1·26	1·39	1·42	1·41	1·49	1·52
Rent not specified	1·28	1·51	1·83	0·82	1·22	0·44	0·46	0·53	0·52	0·83
Households of one family	1·23	1·15	1·35	1·04	0·99	1·04	1·07	1·08	1·14	1·30
Paying under $10	0·86	0·68	0·89	0·60	0·51	0·64	0·69	0·69	0·76	0·93
$10-$15	0·90	0·84	1·10	0·72	0·62	0·76	0·73	0·80	0·85	1·15
16- 24	1·02	1·03	1·32	0·86	0·82	0·94	0·82	0·90	1·03	1·27
25- 39	1·20	1·26	1·52	1·04	1·00	1·06	1·09	1·17	1·19	1·41
40- 59	1·42	1·59	1·82	1·22	1·23	1·27	1·32	1·39	1·37	1·60
60 and over	1·66	1·96	1·96	1·48	1·34	1·44	1·51	1·47	1·56	1·54
Rent not specified	1·29	1·51	1·83	0·82	1·23	0·45	0·45	0·45	0·52	0·83
Households of two or more families	0·89	0·86	0·95	0·80	0·74	0·81	0·81	0·86	0·86	0·98
Paying under $10	0·60	0·50	0·67	0·47	–	0·40	0·40	0·57	0·49	–
$10-$15	0·68	0·63	1·01	0·48	0·36	0·46	0·52	0·66	0·64	0·86
16- 24	0·71	0·84	0·86	0·65	0·56	0·61	0·66	0·70	0·79	0·92
25- 39	0·88	0·92	1·00	0·79	0·69	0·80	0·79	0·88	0·86	1·03
40- 59	0·95	0·85	1·25	0·84	0·87	0·92	0·91	0·97	0·91	1·16
60 and over	1·06	1·25	1·21	0·93	0·76	1·02	0·90	1·04	1·05	1·38
Rent not specified	1·25	–	1·75	0·57	0·80	0·28	0·56	0·44	0·63	–

[1]Includes only households with husband and wife living together.

TABLE 25. Number of rooms and average monthly earnings per person in tenant households,[1] by monthly rental paid, cities of 30,000 population and over, 1931

City	No. of Rooms per Person According to Specified Rentals						Average Monthly Earnings per Person According to Specified Rentals					
	Less than $10	$10–$15	$16–$24	$25–$39	$40–$59	$60 and over	Less than $10	$10–$15	$16–$24	$25–$39	$40–$59	$60 and over
							$	$	$	$	$	$
Halifax, N.S.	0·7	0·7	0·9	1·1	1·4	1·7	14	14	18	26	42	71
Saint John, N.B.	0·9	1·1	1·3	1·5	1·7	1·9	11	15	23	36	57	79
Montreal, Que.	0·8	0·9	1·0	1·2	1·4	1·6	14	16	21	29	45	75
Quebec, Que.	0·7	0·8	0·9	1·1	1·3	1·6	14	15	19	25	37	62
Verdun, Que.	0·8	0·9	1·0	1·2	1·3	1·2	20	19	24	30	49	61
Three Rivers, Que.	0·8	0·8	0·9	1·1	1·4	1·7	12	14	19	29	48	59
Toronto, Ont.	0·7	0·8	1·0	1·2	1·4	1·7	21	19	20	23	38	79
Hamilton, Ont.	0·8	0·9	1·1	1·3	1·5	1·8	17	16	18	26	52	85
Ottawa, Ont.	0·7	0·9	1·1	1·3	1·6	1·9	17	15	20	30	49	84
London, Ont.	1·0	1·1	1·3	1·5	1·8	1·9	16	16	20	31	53	89
Windsor, Ont.	0·9	0·9	1·0	1·2	1·4	1·6	25	14	15	23	41	84
Kitchener, Ont.	0·6	0·8	1·0	1·3	1·6	1·9	18	17	18	25	51	102
Brantford, Ont.	0·9	1·1	1·3	1·5	1·8	1·9	13	13	17	30	57	82
Winnipeg, Man.	0·6	0·7	0·9	1·0	1·2	1·5	12	14	17	26	41	76
Reginn, Sask.	0·5	0·6	0·8	1·0	1·2	1·3	11	13	18	26	42	62
Saskatoon, Sask.	0·6	0·8	0·9	1·1	1·3	1·5	12	15	19	27	43	67
Calgary, Alta.	0·7	0·7	0·8	1·1	1·3	1·5	14	16	20	29	46	65
Edmonton, Alta.	0·7	0·8	0·9	1·2	1·4	1·5	12	16	22	30	48	61
Vancouver, B.C.	0·7	0·9	1·0	1·2	1·4	1·5	17	16	20	30	49	73
Victoria, B.C.	0·9	1·2	1·3	1·4	1·5	1·6	14	20	26	35	44	68

[1] Includes only one-family households with wage-earner heads and husband and wife living together.

TABLE 26. Average monthly earnings[1] per tenant household[2] with wage-earner head, by monthly rental paid, cities of 30,000 population and over, 1931

City	Monthly Rental						
	Total	Less than $10	$10–$15	$16–$24	$25–$39	$40–$59	$60 and over
	$	$	$	$	$	$	$
Halifax, N.S.	114	54	65	85	124	185	282
Saint John, N.B.	112	48	70	106	154	217	294
Montreal, Que.	123	54	71	101	148	188	299
Quebec, Que.	126	71	73	102	142	191	321
Verdun, Que.	116	78	76	102	131	232	339
Three Rivers, Que.	113	51	69	103	164	235	264
Toronto, Ont.	119	66	66	81	100	150	301
Hamilton, Ont.	106	54	60	78	112	186	340
Ottawa, Ont.	151	62	71	101	142	201	312
London, Ont.	124	62	67	85	129	195	329
Windsor, Ont.	110	94	50	60	97	161	311
Kitchener, Ont.	101	50	60	79	112	200	389
Brantford, Ont.	94	45	55	74	126	228	310
Winnipeg, Man.	124	37	53	75	115	162	289
Reginn, Sask.	121	37	49	76	114	171	262
Saskatoon, Sask.	124	49	62	82	117	184	262
Calgary, Alta.	122	52	59	76	118	179	278
Edmonton, Alta.	118	46	65	86	128	197	280
Vancouver, B.C.	112	58	59	79	119	178	283
Victoria, B.C.	111	56	77	104	134	162	232

[1] Earnings of all members of family.
[2] Includes only one-family households with husband and wife living together.

TABLE 27. Average number of children per tenant household[1], by monthly rental paid, cities of 30,000 population and over, 1931

City	Monthly Rental					
	Less than $10	$10–$15	$16–$24	$25–$39	$40–$59	$60 and over
Halifax, N.S.	1·7	2·4	2·5	2·4	1·8	1·4
Saint John, N.B.	2·0	2·5	2·3	2·0	1·3	1·3
Montreal, Que.	1·8	2·1	2·5	2·8	1·7	1·4
Quebec, Que.	2·8	2·7	3·1	3·3	2·7	2·3
Verdun, Que.	1·8	1·8	2·0	2·1	2·3	3·5
Three Rivers, Que.	2·1	2·9	3·3	3·3	2·4	1·9
Toronto, Ont.	0·9	1·3	1·7	1·9	1·6	1·2
Hamilton, Ont.	1·1	1·6	2·1	1·9	1·3	1·5
Ottawa, Ont.	1·5	2·4	2·7	2·4	1·7	1·2
London, Ont.	1·8	1·9	2·0	1·8	1·3	1·3
Windsor, Ont.	1·6	1·5	1·9	2·0	1·5	1·3
Kitchener, Ont.	0·7	1·4	2·0	2·0	1·5	1·3
Brantford, Ont.	1·2	2·0	2·0	1·9	1·6	1·1
Winnipeg, Man.	0·9	1·5	2·1	2·1	1·5	1·1
Regina, Sask.	1·2	1·7	1·9	2·0	1·6	1·6
Saskatoon, Sask.	1·9	2·0	2·1	2·0	1·8	1·3
Calgary, Alta.	1·7	1·5	1·6	1·8	1·5	1·5
Edmonton, Alta.	1·8	1·9	1·8	1·8	1·6	1·7
Vancouver, B.C.	1·3	1·6	1·7	1·7	1·2	1·2
Victoria, B.C.	1·9	1·8	1·8	1·6	1·2	1·0

[1] Includes only one-family households with husband and wife living together.

TABLE 28. Numerical and percentage distribution of urban owned homes, by intervals of value, urban by size groups, Canada and provinces, 1931

Province and Urban Group	Total Urban Owned Homes	Valued at— Under $500	$500 and under $1,000	$1,000 and under $2,000	$2,000 and under $3,000	$3,000 and under $4,000	$4,000 and under $5,000	$5,000 and under $10,000	$10,000 and over	Not specified
				NUMBER						
CANADA	**565,084**	**13,955**	**39,000**	**95,603**	**94,463**	**89,897**	**69,760**	**123,096**	**37,666**	**1,554**
Urban 30,000 and over	252,586	1,612	4,715	21,625	34,481	43,223	40,790	80,167	25,427	546
Urban under 30,000	312,498	12,343	34,285	74,068	59,982	46,674	28,970	42,929	12,239	1,008
Prince Edward Island	2,397	95	356	606	400	333	210	345	49	3
Urban under 30,000	2,397	95	356	606	400	333	210	345	49	3
Nova Scotia	22,992	1,145	3,078	5,171	3,977	3,211	2,203	3,494	637	76
Urban 30,000 and over	4,271	49	104	422	695	746	595	1,270	362	28
Urban under 30,000	18,721	1,096	2,974	4,749	3,282	2,465	1,608	2,224	275	48
New Brunswick	10,727	299	1,006	2,099	1,946	1,754	1,168	1,958	460	37
Urban 30,000 and over	2,560	45	165	443	398	385	266	658	191	9
Urban under 30,000	8,167	254	841	1,656	1,548	1,369	902	1,300	269	28
Quebec	106,067	2,110	7,121	19,912	17,388	14,599	9,375	21,231	13,824	507
Urban 30,000 and over	34,631	156	650	3,208	4,217	5,081	3,537	10,271	7,333	178
Urban under 30,000	71,436	1,954	6,471	16,704	13,171	9,518	5,838	10,960	6,491	329
Ontario	263,715	3,188	12,357	35,796	39,863	44,228	39,788	70,803	17,234	458
Urban 30,000 and over	120,868	211	576	5,278	11,667	19,566	23,413	47,282	12,678	197
Urban under 30,000	142,847	2,977	11,781	30,518	28,196	24,662	16,375	23,521	4,556	261
Manitoba	35,147	927	2,401	5,723	6,166	5,980	4,869	7,220	1,813	48
Urban 30,000 and over	22,712	68	229	2,101	3,820	4,379	4,028	6,394	1,679	17
Urban under 30,000	12,435	859	2,172	3,622	2,346	1,601	841	826	134	34
Saskatchewan	36,744	2,677	5,429	8,800	5,855	4,303	3,165	5,646	744	125
Urban 30,000 and over	11,237	229	582	1,426	1,380	1,506	1,705	3,870	535	4
Urban under 30,000	25,507	2,448	4,847	7,374	4,475	2,797	1,460	1,776	209	121
Alberta	36,021	2,348	4,225	7,889	6,525	5,410	3,465	5,193	885	81
Urban 30,000 and over	20,533	560	1,253	3,217	3,780	3,827	2,740	4,345	794	17
Urban under 30,000	15,488	1,788	2,972	4,672	2,745	1,583	725	848	91	64
British Columbia	51,274	1,166	3,027	9,697	12,343	10,079	5,517	7,206	2,020	219
Urban 30,000 and over	35,774	294	1,156	5,530	8,524	7,733	4,506	6,077	1,855	99
Urban under 30,000	15,500	872	1,871	4,167	3,819	2,346	1,011	1,129	165	120
				PERCENTAGE						
CANADA	**100·0**	**2·5**	**6·9**	**16·9**	**16·7**	**15·9**	**12·3**	**21·8**	**6·7**	**0·3**
Urban 30,000 and over	100·0	0·6	1·9	8·6	13·7	17·1	16·1	31·7	10·1	0·2
Urban under 30,000	100·0	4·0	11·0	23·7	19·2	14·9	9·3	13·7	3·9	0·3
Prince Edward Island	100·0	4·0	14·8	25·3	16·7	13·9	8·8	14·4	2·0	0·1
Urban under 30,000	100·0	4·0	14·8	25·3	16·7	13·9	8·8	14·4	2·0	0·1
Nova Scotia	100·0	5·0	13·4	22·5	17·3	13·9	9·6	15·2	2·8	0·3
Urban 30,000 and over	100·0	1·2	2·4	9·9	16·3	17·5	13·9	29·7	8·5	0·6
Urban under 30,000	100·0	5·8	15·9	25·4	17·5	13·2	8·6	11·9	1·5	0·2
New Brunswick	100·0	2·8	9·4	19·6	18·1	16·3	10·9	18·3	4·3	0·3
Urban 30,000 and over	100·0	1·8	6·4	17·3	15·6	15·0	10·4	25·7	7·5	0·3
Urban under 30,000	100·0	3·1	10·3	20·3	19·0	16·8	11·0	15·9	3·3	0·3
Quebec	100·0	2·0	6·7	18·8	16·4	13·8	8·8	20·0	13·0	0·5
Urban 30,000 and over	100·0	0·4	1·9	9·3	12·2	14·7	10·2	29·6	21·2	0·5
Urban under 30,000	100·0	2·7	9·1	23·4	18·4	13·3	8·2	15·3	9·1	0·5
Ontario	100·0	1·2	4·7	13·6	15·1	16·8	15·1	26·8	6·5	0·2
Urban 30,000 and over	100·0	0·2	0·5	4·3	9·6	16·2	19·4	39·1	10·5	0·2
Urban under 30,000	100·0	2·1	8·2	21·3	19·7	17·3	11·5	16·5	3·2	0·2
Manitoba	100·0	2·6	6·8	16·3	17·6	17·0	13·9	20·5	5·2	0·1
Urban 30,000 and over	100·0	0·3	1·0	9·3	16·8	19·3	17·7	28·1	7·4	0·1
Urban under 30,000	100·0	6·9	17·5	29·1	18·9	12·9	6·7	6·6	1·1	0·3
Saskatchewan	100·0	7·3	14·8	24·0	15·9	11·7	8·6	15·4	2·0	0·3
Urban 30,000 and over	100·0	2·0	5·2	12·7	12·3	13·4	15·2	34·4	4·8	-
Urban under 30,000	100·0	9·6	19·0	28·9	17·5	11·0	5·7	7·0	0·8	0·5
Alberta	100·0	6·5	11·8	21·9	18·1	15·0	9·6	14·4	2·5	0·2
Urban 30,000 and over	100·0	2·7	6·1	15·7	18·4	18·6	13·3	21·2	3·9	0·1
Urban under 30,000	100·0	11·5	19·2	30·2	17·7	10·2	4·7	5·5	0·6	0·4
British Columbia	100·0	2·3	5·9	18·9	24·1	19·7	10·8	14·0	3·9	0·4
Urban 30,000 and over	100·0	0·8	3·2	15·5	23·8	21·6	12·6	17·0	5·2	0·3
Urban under 30,000	100·0	5·6	12·1	26·9	24·6	15·1	6·5	7·3	1·1	0·8

TABLE 29. Numerical and percentage distribution of owned homes, by intervals of value, cities of 30,000 population and over, 1931

City	Total Owned Homes	Valued at— Under $500	$500 and under $1,000	$1,000 and under $2,000	$2,000 and under $3,000	$3,000 and under $4,000	$4,000 and under $5,000	$5,000 and under $10,000	$10,000 and over	Not Specified
NUMBER										
Halifax, N.S.	4,271	49	104	422	695	746	595	1,270	362	28
Saint John, N.B.	2,560	45	165	443	398	385	266	658	191	9
Montreal, Que.	25,455	129	513	2,357	3,005	3,830	2,515	7,408	5,586	112
Quebec, Que.	5,829	12	92	508	651	701	614	1,874	1,338	39
Verdun, Que.	1,632	5	19	155	332	270	191	463	191	6
Three Rivers, Que.	1,715	10	26	188	229	280	217	526	218	21
Toronto, Ont.	69,463	70	123	1,121	3,647	9,837	14,776	30,855	8,941	93
Hamilton, Ont.	17,876	60	124	1,630	3,350	3,729	3,097	4,800	1,051	35
Ottawa, Ont.	9,746	23	167	831	1,061	1,181	1,080	4,125	1,235	43
London, Ont.	9,726	30	66	870	2,049	2,265	1,587	2,370	473	16
Windsor, Ont.	5,951	10	22	114	411	849	1,043	2,874	624	4
Kitchener, Ont.	4,070	6	10	67	186	756	1,289	1,555	199	2
Brantford, Ont.	4,036	12	64	645	963	940	541	703	155	4
Winnipeg, Man.	22,712	68	229	2,101	3,820	4,379	4,028	6,394	1,679	14
Reginn, Sask.	6,048	49	277	729	690	811	924	2,240	315	4
Snskatoon, Sask.	5,189	180	305	697	690	695	781	1,621	220	-
Calgary, Alta.	10,526	100	307	1,300	1,873	2,044	1,549	2,810	539	4
Edmonton, Alta.	10,007	460	946	1,917	1,907	1,783	1,191	1,535	255	13
Vancouver, B.C.	30,884	272	1,046	4,729	7,202	6,662	3,923	5,346	1,632	72
Victoria, B.C.	4,890	22	110	801	1,322	1,071	583	731	223	27
PERCENTAGE										
Halifax, N.S.	100·00	1·15	2·44	9·88	16·27	17·47	13·93	29·74	8·47	0·65
Saint John, N.B.	100·00	1·76	6·45	17·30	15·55	15·04	10·39	25·70	7·46	0·35
Montreal, Que.	100·00	0·51	2·01	9·26	11·81	15·05	9·88	29·10	21·94	0·44
Quebec, Que.	100·00	0·20	1·58	8·72	11·17	12·03	10·53	32·15	22·95	0·67
Verdun, Que.	100·00	0·31	1·17	9·50	20·34	16·54	11·70	28·37	11·70	0·37
Three Rivers, Que.	100·00	0·58	1·52	10·06	13·35	16·33	12·65	30·67	12·71	1·23
Toronto, Ont.	100·00	0·10	0·18	1·61	5·25	14·16	21·27	44·42	12·87	0·14
Hamilton, Ont.	100·00	0·34	0·69	9·12	18·74	20·86	17·32	26·85	5·88	0·20
Ottawa, Ont.	100·00	0·23	1·71	8·53	10·89	12·12	11·08	42·33	12·67	0·44
London, Ont.	100·00	0·31	0·68	8·94	21·07	23·29	16·32	24·37	4·86	0·16
Windsor, Ont.	100·00	0·17	0·37	1·91	6·91	14·27	17·53	48·29	10·48	0·07
Kitchener, Ont.	100·00	0·15	0·24	1·65	4·57	18·57	31·67	38·21	4·89	0·05
Brantford, Ont.	100·00	0·30	1·59	15·98	23·86	23·51	13·40	17·42	3·84	0·10
Winnipeg, Man.	100·00	0·30	1·01	9·25	16·82	19·28	17·74	28·15	7·39	0·06
Regina, Sask.	100·00	0·81	4·58	12·05	11·41	13·41	15·28	37·18	5·21	0·07
Saskntoon, Sask.	100·00	3·47	5·88	13·43	13·30	13·39	15·05	31·24	4·24	-
Calgary, Alta.	100·00	0·95	2·92	12·35	17·79	19·42	14·72	26·69	5·12	0·04
Edmonton, Alta.	100·00	4·59	9·45	19·16	19·06	17·82	11·90	15·34	2·55	0·13
Vancouver, B.C.	100·00	0·88	3·39	15·31	23·32	21·57	12·70	17·31	5·29	0·23
Victoria, B.C.	100·00	0·45	2·25	16·38	27·04	21·90	11·92	14·95	4·56	0·55

TABLE 30. Numerical and percentage distribution of urban owned homes, by value of home and occupational status of head, Canada, 1931

Value of Home	Total Urban Owned Homes	Employer	Own Account	Wage-Earner	No Occupation or Pay	Income
NUMBER						
All values	**565,081**	**48,989**	**74,750**	**320,493**	**50,210**	**70,642**
Under $500	13,955	454	1,929	8,387	1,396	1,789
$500 and under $1,000	39,000	1,489	4,865	23,194	4,131	5,321
$1,000 and under $2,006	95,693	4,975	11,932	56,038	9,190	12,949
$2,000 and under $3,000	94,463	5,719	11,539	56,765	8,504	11,936
$3,000 and under $4,000	89,897	6,304	10,638	54,576	7,951	10,428
$4,000 and under $5,000	69,760	5,598	8,299	42,619	5,764	7,480
$5,000 and under $10,000	123,096	14,958	17,958	65,012	10,432	14,736
$10,000 and over	37,666	9,242	7,285	12,597	2,710	5,826
Not specified	1,554	250	305	705	117	177
PERCENTAGE						
All values	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Under $500	2·47	0·93	2·58	2·62	2·78	2·53
$500 and under $1,000	6·90	3·04	6·51	7·24	8·23	7·53
$1,000 and under $2,000	16·03	10·15	15·96	17·67	18·32	18·33
$2,000 and under $3,000	16·72	11·67	15·43	17·71	16·94	16·90
$3,000 and under $4,000	15·91	12·87	14·23	17·03	15·83	14·76
$4,000 and under $5,000	12·35	11·43	11·10	13·30	11·48	10·59
$5,000 and under $10,000	21·78	30·53	24·03	20·28	20·78	20·86
$10,000 and over	6·66	18·87	9·75	3·93	5·41	8·25
Not specified	0·28	0·51	0·41	0·22	0·23	0·25

TABLE 31. Percentage distribution of urban homes, by monthly rental[1] and tenure, urban by size groups and cities of 30,000 population and over, 1931

Monthly Rental	Total Urban	Urban under 30,000	Urban 30,000 and over	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Quebec, Que.	Verdun, Que.	Three Rivers, Que.	Toronto, Ont.	Hamilton, Ont.	Ottawa, Ont.
P.C. IN RENTED HOMES												
Total	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Paying less than $4	0·45	2·30	0·05	0·29	0·44	0·06	0·06	–	0·10	0·03	0·06	0·02
$ 5-$ 9	6·08	12·58	1·44	3·71	5·21	0·93	1·36	0·23	1·92	0·77	1·86	0·82
10- 14	17·64	26·99	11·47	18·19	26·76	13·62	12·50	4·64	20·17	5·84	10·05	7·35
15- 19	15·86	16·89	15·20	14·61	20·66	20·30	19·37	22·19	25·13	8·55	15·30	9·70
20- 24	13·36	10·30	15·76	12·07	14·20	20·87	19·78	28·38	24·58	10·07	17·00	11·18
25- 29	11·55	8·90	13·98	11·65	9·65	12·85	14·45	20·24	11·10	13·16	15·68	13·31
30- 34	10·02	7·60	11·43	11·13	7·00	9·06	9·40	13·99	5·55	14·54	13·93	15·35
35- 39	7·87	5·42	8·58	9·53	4·79	6·40	6·60	6·99	3·97	12·72	10·88	12·34
40- 44	5·37	3·14	6·15	6·03	3·28	4·07	4·22	1·74	2·70	9·00	6·70	9·00
45- 40	3·41	1·77	4·43	3·35	2·18	2·62	2·76	0·72	1·51	6·65	3·75	6·50
50- 54	2·07	1·09	2·99	2·00	1·50	1·85	1·79	0·41	0·81	5·28	1·75	4·11
55- 59	1·35	0·58	2·02	1·20	1·12	1·32	1·25	0·15	0·62	3·70	0·73	2·07
60 and over	4·97	2·44	6·50	6·24	3·21	6·05	6·46	0·32	1·84	9·69	2·31	7·65
P.C. IN OWNED HOMES												
Total	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Paying less than $4	2·48	3·96	0·64	1·15	1·76	0·45	0·21	0·40	0·59	0·09	0·34	0·23
$ 5-$ 0	8·89	13·86	2·54	3·31	8·39	2·81	1·65	2·11	2·27	0·36	0·99	2·42
10- 14	10·33	14·61	4·90	5·91	10·62	5·34	5·31	5·72	6·78	0·98	4·60	4·87
15- 19	10·29	13·15	7·32	8·77	10·18	6·53	6·43	9·97	7·79	1·95	0·85	6·09
20- 24	10·10	11·15	9·05	10·79	9·17	7·50	6·96	13·23	8·19	3·77	12·06	6·76
25- 20	9·79	9·57	10·23	10·60	9·30	9·05	7·44	10·77	9·84	7·52	12·59	7·33
30- 34	9·00	7·75	10·34	9·70	8·58	8·38	7·20	8·52	9·58	10·72	12·22	7·23
35- 30	7·75	6·28	9·74	8·26	6·40	6·01	6·46	7·02	7·82	13·32	10·64	6·73
40- 44	6·50	4·87	8·66	7·33	5·26	5·15	5·96	5·77	6·70	11·33	8·45	6·35
45- 49	5·25	3·50	7·25	6·35	4·66	4·68	5·46	4·91	5·71	9·31	6·07	6·07
50- 54	3·86	2·31	5·85	5·35	4·15	4·31	4·96	4·41	4·90	7·60	4·38	5·82
55- 59	2·78	1·55	4·39	4·35	3·65	3·92	4·46	3·91	4·21	6·26	3·32	5·57
60 and over	12·98	7·44	19·09	18·13	17·88	35·87	37·50	23·26	25·62	26·79	14·49	34·53

Monthly Rental	London, Ont.	Windsor, Ont.	Kitchener, Ont.	Brantford, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.	Victoria, B.C.
P.C. IN RENTED HOMES											
Total	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Paying less than $4	0·00	0·01	0·26	0·05	0·23	0·16	0·11	0·04	0·49	0·08	0·17
$ 5-$ 9	0·79	0·48	2·83	2·66	2·85	2·45	1·77	1·16	4·75	2·12	2·20
10- 14	7·58	4·49	17·45	18·81	12·90	16·03	14·25	9·96	16·20	10·73	18·23
15- 19	14·57	5·96	14·02	21·93	9·74	9·96	9·60	10·66	12·24	12·84	18·16
20- 24	15·98	7·75	12·35	20·07	7·95	6·73	7·62	11·10	9·66	13·07	16·33
25- 20	15·81	15·90	14·04	13·30	9·43	8·25	9·69	12·30	11·46	13·31	14·46
30- 34	14·60	18·78	15·12	9·40	10·41	9·78	11·23	13·65	12·48	12·95	12·49
35- 30	11·40	17·93	13·50	6·75	9·38	8·99	10·22	11·46	10·65	12·06	8·65
40- 44	7·05	12·14	5·01	3·50	7·98	7·90	8·86	8·80	6·99	8·70	4·10
45- 40	3·80	6·15	2·18	1·07	6·90	6·90	7·85	6·50	4·91	4·71	1·80
50- 54	2·26	3·58	1·04	0·51	5·90	5·96	6·82	4·75	3·55	2·66	0·80
55- 59	1·49	2·15	0·54	0·31	4·90	5·40	5·78	3·50	2·54	1·22	0·46
60 and over	4·61	4·68	1·66	1·64	11·43	11·49	6·20	6·12	4·08	5·55	2·15
P.C. IN OWNED HOMES											
Total	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**	**100·00**
Paying less than $4	0·31	0·17	0·15	0·30	0·37	0·81	3·47	0·95	4·60	0·88	0·45
$ 5-$ 9	0·98	0·51	0·34	2·60	1·86	6·02	7·44	4·02	11·83	4·74	3·30
10- 14	4·58	1·02	0·86	9·90	5·35	7·61	8·07	7·55	11·84	9·36	9·29
15- 19	9·95	2·22	1·64	13·60	8·43	7·29	8·06	9·85	11·26	12·61	14·39
20- 24	13·19	4·62	2·89	15·38	10·83	7·15	8·00	11·25	11·51	15·37	16·76
25- 29	14·15	7·68	8·35	15·12	11·87	7·82	7·89	11·87	11·46	14·22	14·84
30- 34	13·37	9·50	14·33	12·20	11·64	8·58	8·32	10·83	9·58	11·44	11·24
35- 39	10·59	10·67	19·52	7·90	10·66	9·24	9·34	8·80	7·46	7·37	7·58
40- 44	7·59	9·97	16·99	6·00	9·04	8·54	8·00	7·25	5·43	5·69	4·82
45- 49	5·19	8·65	10·40	4·75	6·59	7·50	6·48	5·75	3·60	4·21	3·22
50- 54	3·86	7·50	6·40	3·50	4·48	6·50	5·24	4·50	2·55	2·98	2·40
55- 59	3·10	6·43	3·95	2·26	3·15	5·50	4·19	3·45	1·98	1·86	1·90
60 and over	13·14	31·06	14·18	6·49	15·73	17·44	15·50	13·93	6·90	9·27	9·81

[1] Original data for rented homes smoothed to $5 intervals; data for owned homes estimated by assuming the annual rental value to be 10 p.c. of recorded 1931 value.

TABLE 32. Relation of annual housing costs to income and buying costs for 473 Civil Service families, 1930-31

Item	Annual Average Income, Expenditure and Original Shelter Costs					P.C. of Income Included in Separate Items					P.C. of Buying Cost Included in Separate Items				
	Income Group					Income Group					Income Group				
	Total $1,000-$2,999	$1,000-$1,499	$1,500-$1,999	$2,000-$2,499	$2,500-$2,999	Total $1,000-$2,999	$1,000-$1,499	$1,500-$1,999	$2,000-$2,499	$2,500-$2,999	Total	$1,000-$1,499	$1,500-$1,999	$2,000-$2,499	$2,500-$2,999
	473 cases[1]	77 cases[1]	166 cases[1]	145 cases[1]	85 cases[1]										
	$	$	$	$	$										
Salary	1,820·63	1,321·92	1,576·44	1,984·94	2,468·99	90·99	96·78	91·13	89·13	90·79	43·62	44·37	43·00	43·50	44·22
Income	2,000·87	1,365·91	1,729·90	2,226·99	2,719·51	100·00	100·00	100·00	100·00	100·00	47·94	45·85	47·18	48·80	48·71
Total expenditure	1,961·32	1,417·37	1,718·09	2,158·44	2,592·82	98·02	103·77	99·32	96·92	95·34	46·99	47·57	46·86	47·30	46·44
Total annual shelter cost	714·04	535·85	644·38	779·22	900·36	35·69	39·23	37·25	34·99	33·11	17·11	17·99	17·58	17·08	16·13
Depreciation (estimated)	95·79	68·75	87·04	105·44	120·92	4·79	5·03	5·03	4·73	4·45	2·30	2·31	2·38	2·31	2·17
Interest loss (estimated)	155·66	117·77	141·94	175·63	182·69	7·78	8·62	8·21	7·89	6·72	3·73	3·96	3·87	3·85	3·27
Cash outlay—															
Total	462·59	349·33	415·40	498·15	596·75	23·12	25·57	24·01	22·37	21·94	11·08	11·72	11·33	10·92	10·69
Exclusive of instalment and mortgage payments	247·72	177·55	228·81	266·27	316·62	12·38	13·00	13·23	11·96	11·64	5·93	5·95	6·24	5·84	5·68
Property taxes	115·57	82·59	103·68	123·87	154·52	5·78	6·05	5·99	5·56	5·68	2·77	2·77	2·83	2·71	2·77
Instalment payments	38·42	65·24	43·65	24·27	28·06	1·92	4·78	2·52	1·09	1·03	0·92	2·19	1·19	0·53	0·50
Mortgage interest	99·08	63·92	81·59	107·88	150·07	8·82	7·80	8·26	9·32	9·27	4·23	3·58	3·90	4·55	4·51
Mortgage principal	77·37	42·62	61·35	99·73	102·00										
Improvements during period Nov. 1/30-Oct 31/31	42·70	35·57	42·04	43·49	49·12	2·13	2·61	2·43	1·95	1·81	1·02	1·19	1·14	0·96	0·88
Repairs and replacements	70·46	49·47	65·15	76·25	89·65	3·52	3·62	3·77	3·42	3·30	1·69	1·66	1·78	1·67	1·61
Fire insurance	10·56	6·47	10·45	11·23	13·32	0·53	0·47	0·61	0·51	0·49	0·25	0·22	0·29	0·25	0·24
Other items	8·49	3·45	7·49	11·43	10·01	0·42	0·25	0·43	0·52	0·36	0·20	0·11	0·20	0·25	0·18
Buying cost	4,174·04	2,979·37	3,666·44	4,563·51	5,583·22	208·61	218·12	211·95	204·92	205·30	100·00	100·00	100·00	100·00	100·00
Equity	2,558·94	1,869·72	2,255·24	2,850·50	3,279·07	127·89	136·88	130·37	128·00	120·58	61·31	62·76	61·51	62·46	58·73
Improvements prior to Oct. 31/31	529·59	368·46	513·08	659·83	485·62	26·47	26·98	29·66	29·63	17·86	12·69	12·37	13·99	14·46	8·70
Selling value	4,430·14	3,233·12	4,047·86	4,786·25	5,653·61	221·41	236·70	233·99	214·92	207·89	106·14	108·52	110·40	104·88	101·26

[1] 2-, 3- and 4-person families only.

TABLE 33. Summary of housing statistics, cities of 30,000 population and over, 1931

Item	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Quebec, Que.	Verdun, Que.	Trois-Rivières, Que.	Toronto, Ont.	Hamilton, Ont.	Ottawa, Ont.	London, Ont.
TOTAL HOUSEHOLDS										
Population, 1931	59,275	47,614	818,577	130,594	60,745	35,450	631,207	155,547	126,872	71,148
P.C. increase, 1921-31	1·55	0·74	32·35	37·19	142·97	58·49	20·95	36·26	17·65	16·71
P.C. in households	96·71	97·83	97·22	94·75	97·97	95·97	98·49	99·34	96·50	96·57
Total households	12,213	10,925	171,348	23,134	13,919	6,208	149,994	37,270	27,708	17,584
No. in hotels, boarding houses, etc.	66	35	537	91	5	17	456	53	60	35
Ordinary households	12,147	10,890	170,811	23,043	13,914	6,191	149,538	37,217	27,658	17,549
One-family households	11,027	10,196	159,931	21,636	13,346	6,737	136,944	34,324	25,390	16,271
Multiple-family households	1,120	694	10,880	1,407	668	454	12,594	2,893	2,268	1,278
Multiple-family households occupying less than 6 rooms	214	52	1,829	312	143	67	912	183	148	45
No. of lodging families	1,207	733	11,818	1,543	699	481	14,052	3,091	2,438	1,358
No. per household of—										
Persons	4·55	4·21	4·60	5·29	4·27	5·45	4·10	4·12	4·40	3·88
Children[1]	2·03	1·91	2·21	2·86	2·07	3·06	1·59	1·70	1·96	1·52
Rooms	5·60	6·03	6·43	6·83	4·82	6·66	5·78	5·80	6·52	0·34
Rooms per person	1·23	1·43	1·18	1·10	1·13	1·04	1·41	1·41	1·48	1·64
Typical floor space in workmen's homes, (sq. ft.)	850	650	650	–	–	–	720	750	800	750
P.C. of households occupying—										
Single houses	54·49	18·08	5·54	17·63	3·07	21·13	34·12	71·15	46·77	85·34
Semi-detached	12·37	3·16	5·40	15·57	3·11	16·30	43·19	12·58	17·16	5·65
Apartments and flats	28·66	77·98	86·27	62·23	93·62	55·24	13·96	12·12	22·97	7·95
Rows or terraces	4·48	0·78	2·79	4·57	0·20	7·33	8·73	4·15	13·10	1·06
OWNERS										
Total owned homes (ordinary households only)	4,271	2,560	25,455	5,829	1,632	1,715	69,463	17,876	9,746	9,726
P.C. owned of total homes occupied	35·16	23·51	14·90	25·30	11·73	27·70	46·45	48·03	35·24	55·42
One-family households	3,788	2,358	23,638	6,388	1,544	1,545	62,963	16,389	8,841	8,982
Multiple-family households	483	202	1,817	441	88	170	6,500	1,487	905	744
Multiple-family households occupying less than 6 rooms	28	7	136	61	2	11	197	42	41	11
No. of lodging families	504	219	1,994	492	96	183	7,039	1,678	956	788
No. per household of—										
Persons	4·63	3·99	5·02	5·80	4·71	5·81	4·20	4·14	4·46	3·80
Children[1]	1·95	1·64	2·59	3·25	2·50	3·29	1·66	1·70	1·95	1·44
Rooms	7·18	7·18	6·82	7·26	5·89	6·66	6·77	6·55	7·71	6·80
Rooms per person	1·55	1·80	1·36	1·25	1·25	1·15	1·61	1·68	1·73	1·79
Average value of owned homes ($)	5,100	4,600	6,600	6,800	5,400	5,600	6,500	4,800	6,100	4,600
P.C. of owned homes valued at—										
Less than $3,000	29·93	41·20	23·69	21·81	31·43	26·74	7·15	28·94	21·46	31·05
$3,000-$4,999	31·61	25·52	25·04	22·71	28·35	29·34	35·48	38·26	23·30	39·67
$5,000 and over	38·46	33·28	51·27	55·48	40·22	43·92	57·37	32·80	55·24	29·28
TENANTS										
Total rented homes (ordinary households only)	7,876	8,330	145,356	17,214	12,282	4,476	80,075	19,341	17,912	7,823
P.C. rented of total homes occupied	64·84	76·49	85·10	74·70	88·27	72·30	53·55	51·97	64·76	44·58
One-family households	7,239	7,838	136,293	16,248	11,802	4,192	73,981	17,935	16,549	7,289
Multiple-family households	637	492	9,063	966	480	284	6,094	1,406	1,363	534
Multiple-family households occupying less than 6 rooms	186	45	1,693	251	141	56	715	141	107	34
No. of lodging families	703	614	9,824	1,051	603	298	7,013	1,513	1,482	570
No. per household of—										
Persons	4·61	4·28	4·53	5·12	4·22	5·32	4·02	4·10	4·36	3·98
Children[1]	2·07	1·99	2·15	2·73	2·02	2·98	1·54	1·69	1·96	1·61
Rooms	4·73	5·68	6·18	6·35	4·68	5·27	4·93	5·11	5·88	5·77
Rooms per person	1·05	1·33	1·15	1·05	1·11	0·99	1·23	1·25	1·36	1·45
Average rental as p.c. of average family earnings[2]	22·95	20·54	21·95	22·22	21·55	19·47	30·25	26·42	23·18	25·00
P.C. of tenants paying $15 or less per month rental[3]	25·69	37·19	18·37	17·71	7·06	27·00	8·24	14·78	10·09	11·03

[1] Children of lodging families not included.
[2] Includes only one-family households with wage-earner head and husband and wife living together.
[3] Includes all households with husband and wife living together.

TABLE 33. Summary of housing statistics, cities of 30,000 population and over, 1931—Con.

Item	Windsor, Ont.	Kitchener, Ont.	Brantford, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.	Victoria, B.C.
TOTAL HOUSEHOLDS										
Population, 1931	53,108	30,793	30,107	218,785	53,209	43,291	83,751	79,197	246,593	39,082
P.C. increase, 1921-31	63·53	41·49	2·27	22·17	54·53	58·19	32·31	34·64	51·08	0·92
P.C. in households	99·17	99·28	99·09	98·88	98·21	98·31	98·29	97·90	97·59	94·96
Total households	14,923	7,204	7,503	48,583	12,074	9,769	20,543	19,007	51,258	10,523
No. in hotels, boarding houses, etc.	23	15	16	289	57	71	172	139	738	92
Ordinary households	14,900	7,189	7,487	48,294	12,017	9,598	20,371	18,868	50,530	10,431
One-family households	13,715	6,725	7,012	44,790	11,476	9,180	19,319	18,054	57,436	9,919
Multiple-family households	1,185	464	475	3,504	541	518	1,052	814	3,094	512
Mutiple-family households occupying less than 5 rooms	73	27	24	447	83	84	154	148	616	51
No. of lodging families	1,281	488	498	4,104	585	578	1,143	889	3,353	548
No. per household of—										
Persons	4·18	4·20	3·95	4·37	4·26	4·25	3·94	3·99	3·72	3·43
Children[1]	1·75	1·80	1·65	1·82	1·84	1·82	1·51	1·75	1·46	1·27
Rooms	5·62	5·85	6·19	5·20	4·79	5·09	4·94	4·87	4·83	5·26
Rooms per person	1·34	1·39	1·57	1·19	1·12	1·20	1·25	1·22	1·30	1·53
Typical floorspace in workmen's homes, (sq. ft.)	750	550	800	600	600	500	800	700	700	650
P.C. of households occupying—										
Single houses	59·51	80·37	85·51	72·55	81·37	84·97	80·54	81·16	80·38	80·54
Semi-detached	3·32	6·58	8·58	3·59	1·43	0·70	1·95	3·34	1·75	1·00
Apartments and flats	25·45	10·55	4·91	21·45	16·18	13·32	15·32	15·05	17·15	15·33
Rows or terraces	1·72	2·50	0·90	2·39	1·02	1·01	1·09	0·45	0·71	3·13
OWNERS										
Total owned homes (ordinary households only)	5,951	4,070	4,036	22,712	6,048	5,189	10,526	10,007	30,884	4,890
P.C. owned of total homes occupied	39·94	56·61	53·91	47·03	50·33	53·51	51·57	53·04	51·02	45·88
One-family households	5,353	3,756	3,738	20,905	5,746	4,894	9,884	9,543	29,192	4,599
Multiple-family households	598	314	298	1,807	302	295	542	454	1,592	291
Multiple-family households occupying less than 5 rooms	15	4	9	108	32	39	46	59	256	14
No. of lodging families	644	328	312	1,949	316	329	581	501	1,780	306
No. per household of—										
Persons	4·33	4·35	3·85	4·55	4·58	4·46	4·23	4·24	3·89	3·53
Children[1]	1·83	1·91	1·55	2·09	2·08	1·99	1·83	1·95	1·61	1·31
Rooms	6·52	6·77	6·77	5·19	5·64	5·88	5·89	5·62	5·52	6·13
Rooms per person	1·51	1·55	1·75	1·33	1·23	1·32	1·39	1·32	1·42	1·74
Average value of owned homes ($)	5,300	5,500	4,000	5,000	5,000	4,500	4,500	3,400	4,100	3,900
P.C. of owned homes valued at—										
Less than $3,000	9·37	6·51	41·77	27·39	28·87	36·08	34·02	52·33	43·00	45·37
$3,000–$4,999	31·81	50·27	36·95	37·04	28·71	28·44	34·15	29·75	34·35	34·01
$5,000 and over	58·82	43·12	21·28	35·57	42·42	35·48	31·83	17·91	22·55	19·62
TENANTS										
Total rented homes (ordinary households only)	8,949	3,119	3,451	25,582	5,969	4,509	9,845	8,861	29,546	5,541
P.C. rented of total homes occupied	60·06	43·39	46·09	52·97	49·67	46·49	48·33	46·96	48·98	53·12
One-family households	8,362	2,969	3,274	23,885	5,730	4,286	9,435	8,511	28,244	5,320
Multiple-family households	587	150	177	1,597	239	223	410	350	1,402	221
Multiple-family households occupying less than 5 rooms	58	23	15	339	51	45	118	89	360	37
No. of lodging families	637	160	186	2,155	259	249	462	388	1,583	242
No. per household of—										
Persons	4·08	3·98	4·06	4·11	3·94	4·02	3·62	3·72	3·55	3·34
Children[1]	1·69	1·56	1·76	1·58	1·60	1·63	1·37	1·52	1·30	1·23
Rooms	5·02	4·63	5·51	4·32	3·93	4·19	3·92	4·03	4·12	4·49
Rooms per person	1·23	1·16	1·35	1·05	1·00	1·04	1·08	1·09	1·16	1·34
Average rental as p.c. of average family earnings[2]	31·82	25·74	24·47	28·23	28·93	27·42	27·05	24·58	26·79	21·62
P.C. of tenants paying $15 or less per month rental[3]	5·13	23·84	25·99	18·38	21·45	18·72	13·21	24·58	15·47	24·35

[1] Children of lodging families not included.
[2] Includes only one-family households with wage-earner head and husband and wife living together.
[3] Includes all households with husband and wife living together.

ILLITERACY AND SCHOOL ATTENDANCE

by

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36755—37½

SUMMARY

Illiteracy—or more correctly, literacy—and school attendance are closely allied subjects. In a country amply supplied with schools and with school attendance compulsory in eight of the nine provinces, persons unable to read and write and persons not attending school between certain ages are something of a phenomenon.

The present monograph is concerned with the numbers and distribution throughout Canada of these persons, the underlying causes and the social and economic concomitants.

LITERACY AND ILLITERACY

The census ascertained how many in the population "can read and write"—the numbers *literate* though not the degree of *literacy*. The negative term *illiteracy* is here regarded as the more significant aspect of the situation.

In 1931, there were in Canada 309,396 persons 10 years of age and over who could neither read nor write; this is 3·79 p.c. of the population of that age.

Ages 10 and over were alone considered, as some portion of the population below that age might have had no opportunity to learn to read and write.

Figures of illiteracy, however, must be taken with a great many reservations. Bald comparisons, especially as between provinces, should be avoided. On the whole illiteracy is widespread (geographically) over Canada and, while the percentage is not high as compared with some countries, this diffusion is apt to militate against its immediate elimination. From this it follows that segregation of illiteracy is the best condition for its elimination. Attention may be drawn to two forms of segregation which will inevitably yield to time without increased effort on the part of the school system. These are age, for obvious reasons, and race, for the reason that its chief component, foreign birth, is giving way rapidly to Canadian birth. At present, race with its implication of foreign birth, *bloc* settlement and in-marriage, is the chief factor determining the illiteracy of Canada. After race comes age and after age, rural residence, especially residence in outlying parts. Another factor, but so small that it is practically negligible, is sex, *i.e.*, males tend to be more illiterate than females, but to a very slight degree. Since, however, this degree obtains among the Canadian born and not among the immigrant, it cannot be wholly ignored. It must be borne in mind that there is probably no such possibility as the complete elimination of illiteracy. Even under the best conditions in Canada there is some illiteracy and the same holds true of any country or race. The causes behind this irreducible minimum are obviously so numerous that they may be regarded as almost individual.

COMPARISON WITH OTHER COUNTRIES

A comparison of the illiteracy rates of Canada with those of other countries is not only difficult but well nigh impossible owing to the difference in methods used in measuring illiteracy in the various countries and the lack of recent data for many of these countries. One means, however, is by comparing the illiteracy of the immigrant population in Canada according to their various birthplaces—but this does not take into consideration whether or not a country is sending out its more illiterate population and retaining its more literate. When we consider that certain countries such as Germany and the Scandinavian countries *claim* to have *no* illiteracy and yet we find in Canada illiterate immigrants from these countries, we are led to the conclusion that the illiteracy data of these countries is not collected on the same basis as our own or else that they are exporting their illiterates.

Generally speaking the areas of least illiteracy were found to be in North Western Europe, the areas of greatest illiteracy—those having 50 p.c. or more—in or near the Torrid Zone. But even this broad statement leaves something to be desired in fairness, for it takes no account of the various forms of segregation of illiteracy which may exist within these geographical areas.

Comparing the illiteracy of the immigrants in Canada from forty-five different birthplaces, South Africa showed the least illiteracy—only 0·14 p.c.—but South Africa had less than 5,000 representatives in Canada over 10 years of age, which renders the comparison again somewhat unjust. The British Isles and Possessions and the United States came next, closely followed by the Scandinavian countries, Switzerland and Holland. South America, France and "other" British followed—all of which had less than Canada's rate of 3·79 p.c. Greater than the Canadian rate

were Germany, Belgium, Newfoundland, Spain, "other" Europe, "other" countries, India, Finland, Greece, etc.—all with less than 10 p.c.—and so on down to Armenia and the Ukraine with 21 p.c.

Comparing the illiteracy of certain countries with that of the various age groups in Canada it was found that the United Kingdom, North Western Europe, Japan (except Cho Sen province), Australia, New Zealand and Northern Ireland had about the same rates as that of Canada's lowest group—the 10-19-year-olds. The United States had about the same as Canada's 35-39-year group; France and Czechoslovakia the same as our 55-59-year group; Hungary the same as our 60-64-year group; the Irish Free State comparable to the Canadian 65-69, and the Argentine Republic, Alaska, Newfoundland and Labrador and probably Poland the same as our 95-99-year group. In addition to these are the countries more than half illiterate which are higher than any Canadian age group, the U.S.S.R., Portugal, a number of South and Central American countries, Ceylon, India, Egypt, non-Europeans of the Union of South Africa, the Philippines, etc., etc.

IMPROVEMENT WITH THE PASSING YEARS

The schools of Canada on their part are eliminating illiteracy at a rate which gives rise to a statistical phenomenon, *viz.*, increasing (instead of diminishing) returns. This is proved by the fact that the 10-14-year-olds are not only the least illiterate of the age groups but that their improvement over the immediately older group is greater than of that group over the next older, the same being true of the 15-19-year-olds. This proves that the schools and school attendance agencies are highly efficient. On the other hand this is counteracted by the injection into the population of more illiterate classes at older ages. So long as this continues, illiteracy cannot be eliminated and it cannot be segregated geographically in order to confine the illiterates to a few areas and attack them *en masse* by some kind of drive. As it is, percentages as high as the average or higher are widespread geographically. This idea summarizes the situation from the point of view of improvement. Illiteracy has been decreasing at an undiminishing rate since the date at which the oldest persons now living in Canada were of school age, this rate being accelerated during the last fifteen years. Between 1921 and 1931 there was marked improvement in all classes of the population and, also, the high percentages of illiteracy were confined to fewer areas. The situation at present is, however, that illiterate persons among the early adult ages are more common than is natural considering the rate of improvement in the population as a whole. These particular ages are the ages of the parents of children who are now of school age. It follows that this adds to the problems of school attendance administration that of overcoming the inertia or unwillingness of these parents. The children of illiterate parents showed poorer school attendance during the year 1930-31 than did those of literate parents. This makes the reality of the problem obvious.

SOCIAL AND ECONOMIC CONCOMITANTS

The findings of this study are so important and so striking that they call for a definition of illiteracy quite different from that popularly conceived. Usually we understand by illiteracy merely inability to read or write. If the person is illiterate he is regarded as losing certain social privileges by his status, arising directly from his disability—nothing more. Illiteracy as a social problem is considered commensurate with what the individual loses by this disability and what the country loses through his lack of intelligent grasp of the duties of the citizen because ignorant of letters. If we accept this definition, it becomes at once apparent that both premises and conclusions are open to argument. There are many familiar cases where an illiterate person is more intelligent and more efficient than his literate neighbours. He cannot read, but he has a sort of traditional literacy and native intelligence by which he can not only handle his business efficiently but also keep in touch with world affairs. This is especially true in these days of radios and talking pictures. The situation revealed by this survey contests this definition in all but minor points. The illiterate person, no doubt, loses, and the country of which he is a citizen also loses to an extent, by the fact that he is illiterate, but this is not the most serious side of the situation. In the definition which seems to be more adequate it is not individual illiteracy that is important, but *class* illiteracy. What is all-important is the *reason* why the class is illiterate, not the *fact*. A test of this can easily be made. Suppose by special effort a class of persons which now shows 15 p.c. illiterate, could be made to show only 1 p.c.; would this raise the class from inefficiency to efficiency? The answer in all probability is "no",

except to an insignificant degree. The story told in this monograph is that the illiterate class is below par in every attribute for which they were tested except one—tendency to crime—and also that they show certain attributes which may or may not be anti-social but in any case are *different* from those shown by literate classes. One of these is the tendency to have larger families. The possibility, and even the probability, that this is anti-social arises from the fact that at the same time their earnings are much lower than those of the literate classes, *i.e.*, they are willing to assume responsibilities which they are poorly equipped or unable to meet. The illiterate class is seen to show the following characteristics in a marked degree different from the literate:

(1) a slight tendency to different marital status;

(2) a tendency to have larger families including not only "own" children but other children;

(3) to have fewer dependents other than children;

(4) to have a greater proportion of their children illiterate arising principally out of poorer school attendance;

(5) to have a larger proportion of their wives and children working;

(6) to show much lower earnings per wife and child earning;

(7) to have the heads of family belonging to an occupation class receiving the lowest wages;

(8) to show more illegitimacy;

(9) to show definitely a greater proportion of inmates in mental institutions;

(10) to show, though very slightly, a greater proportion, especially of females, in corrective institutions;

(11) in striking contradistinction to the foregoing, to show *smaller* proportions of persons convicted of indictable offences.

With the conception of illiteracy as the brand of a class, it is easy to see why forcibly raising that class from a state of illiteracy to literacy might even be harmful, as in other cases where the symptom is removed and not the cause. If the class itself voluntarily accomplishes this task, well and good, but it is doubtful that it should be undertaken as a special mission by the literate classes. What is all important is to remove the cause or causes back of the symptoms.

If, then, illiteracy so clearly distinguishes a class for which statistical information would otherwise be very difficult, if not impossible, to obtain, it follows that it is highly important to collect information on illiteracy at the census. Such countries as have ceased to obtain this information are probably losing a great deal. It is of little or no use to obtain some figures by means of army conscripts, etc., for this is attacking the matter at the wrong end—selecting the class first and then measuring its illiteracy, instead of giving the information on illiteracy the opportunity of designating the class.

LITERACY AND CONJUGAL CONDITION

In its relation to conjugal condition, illiteracy is very important. We have already measured or indicated relatively how much illiteracy is due to race, age, rural residence, sex and other factors. Now let us see how much is due to class and how much is accident or opportunity.

In 1931, 5·18 p.c. of the married and "at one time married" population 15 years of age and over were illiterate as compared with 2·44 p.c. of the single. The ready explanation is that the married people are older and thus possibly have had less opportunity for attending school. This explanation may be dismissed, since a comparison of age groups shows that the difference between married and single is greatest at the early ages, *i.e.*, in the most recent marriages. Another explanation is that the illiteracy is regional, but a study of illiteracy figures for all the provinces and urban centres shows that illiteracy prevails in all sections to much the same extent.

On comparing the rates of marriage of the literate and illiterate females, a steady increase in the latter's tendency to marry is seen. From practically no difference, the tendency has been increasing until now the illiterates are 3·3 times as likely to marry as the literates. Viewed from a social standpoint this creates an alarming situation.

The family statistics reveal that, of own children living at home, there are 2·55 per illiterate mother as compared with 2·23 per literate mother or 1·14 times as many. The comparative fertility of the illiterate to the literate females would seem to be 1·49 to 1·00. Applying the same birth, death, fertility and marriage rates as at present, in fifteen years the ratio of literate to illiterate females will be only 6 to 1 as compared with 29 to 1 at present. Thus if these tendencies remain the same and the birth rate to literate mothers continues its apparent decrease, we see that the illiteracy problem is not only a real but a growing one.

There is one other striking feature of illiteracy as regards conjugal condition and that is the tendency to intermarriage among illiterates. Illiterate females in 1931 made a choice of illiterate to literate husbands in the ratio of 24·3 to 1 and illiterate males chose illiterate wives in the ratio of 19·8 to 1. In other words, there was an intermarriage between illiterates of 48·9 p.c., which is highly significant when we consider the higher and younger marriage rates and greater fertility.

Now we see that the illiterate portion of the population is becoming more and more segregated by (1) intermarriage, (2) marrying younger and having more offspring and (3) keeping these offspring out of school. However, this segregation is in itself a check, in that they have to choose their mates from 5 p.c. of the population if they wish to intermarry as is their tendency.

PRESENT STATUS OF SCHOOL ATTENDANCE

Besides its obvious bearing on illiteracy there are many other aspects of school attendance. In the last decade there was an increase of almost 26 p.c. in those attending school as compared with 18 p.c. in the total population. This was due to greater school-mindedness of the population, greater proportions of the population being at school age, lack of work in the last year of the decade for those at older ages who would ordinarily have left school and the raising of compulsory attendance ages throughout the provinces.

Now, more than ever, the years spent at school form a very important part of a lifetime. At the ages of 16-19, school attendance has increased 86 p.c. The average number of years spent at school is 9·9, which is an increase of 1·93 years since 1911. This would seem to indicate that life is growing either progressively fuller or more difficult. Of course, the reason for this lengthening-out is not that every individual remained at school much longer; rather it is due to the fact that some persons remained at school no longer than before but that more persons stayed a long time at school and fewer persons stayed only a year. Males have an average of 39 years gainful employment and females an average of 8 years. Since the sexes attend school in approximately equal numbers and for the same period, 19·8 years are spent at school for every 47 years of gainful employment. If these years at school are wasted by irregular attendance the loss is readily discernible.

Experience seems to show that there is no great gain in sending children to school too young. The proportions at school increase from the age of 6 up to the age of 11, after which they decrease, at first slowly and then rapidly from the age of 13 on, that at 11 being 97·18 p.c. In 1931 both the approach to and recession from the high point (the ages of 10 and 11) were less rapid than in 1921. In 1931 the effect of the Compulsory Attendance Acts is very noticeable as they begin to drop out rapidly at the age of 15, which is not a particular stage in school life.

Census returns show that 94·62 p.c. of all the pupils going to school attended 7-9 months out of a possible 9 months (September to May); 3·19 p.c. attended 4-6 months and 2·19 p.c. attended less than 4 months. The average number was about 7·8 months out of 9, or, say, 87 p.c. of the possible time. Teachers' returns on the same matter show slight variations from census returns, the teachers' returns being in all cases the lower. The teachers' records do not include private schools, etc., but are day-by-day records so that a month in which a day or so has been missed is not counted as a full month as it is by a person answering from memory the questions put by the enumerator. The teachers' reports include also a floating population not seen in the census returns.

Data on the average daily attendance of urban and rural pupils show that although rural pupils find it harder to get to school than do urban pupils (8 p.c. difference), when they do go they attend almost as regularly (2·8 p.c. difference). Because these figures are for persons 5-19 years of age, the chief reason for the non-appearance at school of rural persons is likely to be the earlier dropping out of school. Using these data on months at school in conjunction with the ages of the pupils it is found that in 1931, out of 9·89 years tied down to the school, 1·34 years were wasted through irregularity in attendance. In this there is very little variation in 1931 from conditions in 1921 and 1911.

Data on the school attendance of the Canadian, British and foreign born show that the Canadian born stay longer at school while the British born begin school younger. The British born attend school more regularly than do either of the other two classes. The net result is that the British born put in as much time at school throughout their shorter school career as do the Cana-

dian born. The foreign born attend about 4 months less than the other two classes. If it is presumed that the British and Canadian born attain the same standing it may be concluded that the time spent "tied down to the school" over and above the time actually attended is waste.

When considering school attendance in the nine provinces it is seen that the relationship between the percentage at school age and the number attending school tends if anything to be an inverse one. Therefore, a large proportion of children at school age does not necessarily mean a correspondingly large proportion at school.

Of the time "at" school, the time lost is nearly uniform for the provinces. Quebec is the only marked exception, being so low that it pulls the Dominion average below those of all other provinces. In Quebec school life is also the shortest. This is because of the resemblances of the Quebec Roman Catholic system to European systems. Indeed in all Canada education seems to be approaching this system, as in the last six years pupils have shown an increased tendency to drop out at Grade X, high school work or Ontario second year "Lower School", *i.e.*, at the end of what is considered in Quebec to be "complementary" education.

EXTENT AND DIRECTION OF CHANGES IN SCHOOL ATTENDANCE DURING THE CENTURY

Improvement in school attendance during the decade 1921-31 may be noted in two directions—prolonged school life and increased time actually spent in school. Since 1911 school life has lengthened for all ages from 7·96 to 9·89 or by 1·93 years. The extension in the years at school under 7 is very slight (·06 years) as these are more and more recognized as pre-school years; between 7 and 14 is the largest increase (1·06 years), while from 15 to 17 we note 0·60 years and from 18 to 24, 0·21 years increase.

The time actually spent in school has increased from 6·58 years in 1911 to 8·55 years in 1931, a gain of 1·97 years. The difference in the years of school life and the actual years spent in school is 1·34 and must be regarded as waste. The gain in actual schooling brought about by increased length of school life is an improvement where the gain takes place within the limits of school life (decrease of waste), while at the end, as is the case in most provinces, it is pure cost. The most economical and highest actual gain was in Alberta.

The changes in average school standing are similar to those that took place in school attendance. In the seven years 1924-31, the average pupil gained from 0·16 grades in Ontario to 0·62 grades in Saskatchewan and the average pupil of 14 is now in the high school entrance grade. While in most provinces the average school standing is directly proportional to the number of years schooling, the more rural provinces show a slightly more rapid advance.

Examining the school attendance figures by sex, we find interesting differences. The figures show about the same proportion at school up to the age of 14, a smaller proportion of boys from 15-18 and a larger proportion after that age. The most striking change for both sexes in the decade 1921-31, increased attendance at ages 15 and 16, may be attributed partly to Compulsory Attendance Acts.

Regularity of attendance added 0·42 and 0·38 years in the case of boys and girls, respectively, and the lengthening of school life was by 0·85 and 0·81 years. On the whole, the change that took place in the decade was lengthening the period of school attendance rather than making fuller use of it.

Considering more particularly the population 16 years of age and over, we observe that in the decade the time at school up to this age increased 0·66 years (average grade 8·50). This may be regarded as equivalent to one grade. An average of 1 year is put in at school after 16 and, for the 45·98 p.c. of the population attending school after their sixteenth birthday, the average gain in standing is 2·27 years (average grade 10·77). Distributed over the whole population this gain is 1·04 years.

The elementary school seems to supply the needs of the average person for as long as he attends school; the high school and institutions of higher learning are necessary for the intellectually above average. It is the latter group that raises the educational level of the population to meet the intellectual needs of the country which an elementary education is unable to satisfy.

The education the average person receives could be obtained with full attendance between the ages 7 and 14. In 1931, considering persons over the age of 16 at school, 6·97 p.c. were in Grade VIII, 5·43 p.c. below and 87·60 p.c. above that grade.

INFLUENCE OF PHYSICAL ENVIRONMENT AND POPULATION CONTENT UPON SCHOOL ATTENDANCE

Physical and social environment, regardless of compulsory attendance and other laws, directly influence school attendance. From the physical environment comes a twofold influence, (1) on the proportion of the population attending school and (2) on their regularity of attendance. If we take the 222 census divisions of Canada in 1931 we see a surprising uniformity in the regularity of attendance. Taking 9 months as the full school year, there are only 6 weeks between the poorest and the best. On the whole, only a slight geographical or climatic influence is shown. It is only under extreme conditions that influence of physical environment, once the pupil is registered at school, is appreciable.

There is, however, a remarkable variation in the proportion of the population attending school. Taking the percentages of the population at school at the ages of 7, 11 and 14, by provinces, there is a variation at 7 of 7·05, at 11 of 2·71, but at the age of 14, a range of 26·27 p.c. Thus the variations are due more to a dropping out of school before the age of 14 than to differences at other ages. A comparison of the percentages at school in different counties by nativity shows that the greatest uniformity is in Canadian born and the greatest variation in foreign born. There is little reason to believe that the same physical environment would permit one set of people to go to school and prevent another set from going to school. Thus the effects of physical environment, while present, are very small and are noticeable only in extreme climate and new, unsettled or mountainous parts.

To make more certain of the possible effects of physical environment, the percentage attending school is correlated with the density of population, percentage urban, percentage rural non-farm population and percentage British races. The density and percentage urban are regarded as physical factors, the other two as population content. In a sample of fifty-five counties, omitting the counties which were all urban or in outlying sections, the multiple correlation of percentage at school with the four factors mentioned above was 0·75. The correlation lay almost entirely with percentage British races. That with density of population was *nil* and the rural non-farm population showed a negative correlation.

The conclusion from this seems to be that only in extreme cases do physical conditions affect the percentages attending school. Therefore, the non-attendance around the age of 14 is purely a social phenomenon and will be explained as such presently.

INFLUENCE OF HOME ENVIRONMENT UPON SCHOOL ATTENDANCE

In the foregoing the effects of physical and social conditions have been seen, so now let us trace the relationship between the children not at school and their home conditions. In the 1931 Census special information was collected and classified concerning the parents and guardians in relation to their children and now the influence of home conditions may be easily shown for those not attending school.

In 1931 the number of children not at school between the ages of 7 and 14 was 121,279 out of a total population at these ages of 1,755,348, or 6·91 p.c. Of these there are 96,209 children born to the family and 3,203 guardianship children or a total of 99,412 children found in families. From a study of the attendance of the own children and the guardianship children guardianship is seen to be inimical to school attendance. Again, the larger families show more non-attendance than the smaller. However, the types of families when corrected for size of family show the best state for school attendance to be where both parents are present. We find from careful measurement that there are, of the children found in families, 2,373 out of school owing to lack of one or both parents and 14,079 out of school because of illiteracy of parents. Almost one-third of the total children not at school (38,749) may be said to be kept out by the lack, illiteracy or marital status of parents, regardless of compulsory attendance laws and public opinion. This leaves 82,530 children who are not at school but whose non-attendance cannot be associated with the illiteracy or marital status of the parents. Most of these absences occur at the ages of 7 or 14. A study of the children not at school, by occupational status of parents, shows that the attendance among wage-earners is better than among non-wage-earners. There are strong indications that the occupation of the parent has an influence upon the attendance of the children. Occupations which call for frequent moving about show greater non-attendance, which is only to be expected.

Thus the three most important features of home environment influencing school attendance are (1) the illiteracy of the parents, (2) marital status of the parents and (3) occupation of the parents. Of these the illiteracy of the parents undoubtedly has the greatest influence on the non-attendance of the children.

YEARS SPENT AT SCHOOL BY THE POPULATION OF THE PRAIRIE PROVINCES AS REPORTED IN THE CENSUS OF 1936

In the 1936 Census of the Prairie Provinces something of an innovation was introduced into the schedules to obtain direct evidence upon the school attendance of the population as a whole. The question asked "Number of years spent at school?" referring to the number of years attached to the school does not take into account the regularity of attendance or the intelligence of the persons. However, the number of years spent at school is a certain measure of attainment when applied to the population as a whole. Taking the three provinces by quinquennial age groups, males and females, we see that the age group having the highest median years attendance is 20-24. For this group, over half the population had spent more than 8·2 years at school for the lowest and 9·8 for the highest. The difference is chiefly in the sexes, the females showing from 0·7 to 1·0 years more than the males. Thus we see that in all the provinces 50 p.c. of the persons had attended sufficiently long to attain high school entrance, while in Alberta with 9·8 years the females had attended sufficiently long to cover two years of high school.

By comparing the age groups in ten-year intervals, we can trace the improvements in attendance, remembering that those at 20-24 were at ages of maximum attendance in 1926 and those at 30-34 were at ages of maximum attendance in 1916. The lengthening out of school life is seen to vary from half a year in rural Manitoba to a year and a half in urban Saskatchewan. A lengthening out of 1 year in the period is a fair average of the situation as a whole. This compares with the figures already reached by inference in Chapter VI. Since the improvement seems to be greatest in recent years, the lengthening out of school life is at present about 2 years. These 2 years are due to attendance after the ages of compulsory attendance.

So far we have considered averages as measured by the median; now let us consider the actual number of years at school by age groups. In the first place those who have never entered school may be said to comprise the illiterate portion of the population. At the ages 15-19 as many as 156 per 10,000 were never at school by the year 1936. The figures for "0" years at school are quite comparable with the illiteracy figures and show the same steady increase from younger to older persons. For those who attended less than 5 years but who actually went to school the 15-19 group shows the lowest percentage. This class may be termed literate but in a state where they might easily lapse into illiteracy or semi-illiteracy. When we come to the proportion attending school sufficiently long to have done high school work or more we find the greatest progress in the immediately preceding decade. The rural population shows that one-third have attended long enough to have some high school education while the urban could have two-thirds so educated. This means that secondary education is no longer confined to a select population. Taking the 60-year-olds we see that less than 23 p.c. of the rural population attended school 9 years or more while of the 80-year-olds only 15 p.c. attended this long. Just how much of the lengthening out of school life among the younger population is due to the depression is hard to measure, but from an educational point of view we are living in a new world.

PART I

ILLITERACY

CHAPTER I

STATEMENTS ON LITERACY AND ILLITERACY IN CANADA

Introduction.—The term *illiteracy* is usually employed in statements of the educational status of a country, *i.e.*, the negative term is used instead of the positive. It may be useful to point out that this practice leads to concepts that are far from adequate. As will be developed later, illiteracy is not merely the negative of literacy. In this sense, its measure is less important than it is as a symptom of the presence of a number of anti-social forces, of physical or geographical obstacles, of historical events such as dates of settlement of the racial or nativity composition of the population, of the age distribution (the connection of which with illiteracy in turn is historical) and so on. As a mere picture of the actual educational status it is not nearly as interesting as the positive term, *literacy*. The literacy of the people is, of course, very difficult to describe. However, the census data furnish one simple concept, the number who can read or who think that they can read. In 1931 this number was 8,634,694 in a population of 10,377,000. In 1921 it was 7,015,666 in a population of 8,788,000. The population increased 1,589,000 or about 18 p.c.; the persons able to read increased 1,619,000 or about 23 p.c. Of the population 10 years of age and over 95 out of 100 in 1921 and 96 in 1931 could read. In 1891 only about 85 out of 100 over the age of 10 could read.

An idea of what literacy as reported in the census means is given by the fact that the portion of the population which showed the greatest percentage able to read in 1931 was that between the ages of 10 and 14, where nearly 99 per 100 could read. This fact indicates that the standard of literacy thus measured is not very high. "Able to read" in the census means merely that the person has come within the influence of education. This crossing of a barrier, however, is something.

The literacy attainments of the 96 p.c. who can read are not traceable from census data except very indirectly and indistinctly. However, from school attendance (census) figures by ages and months at school, it is possible to estimate fairly closely how long the person stays at school, and from data on ages and grades, obtained directly from teachers, it is possible to estimate the correlation between time at school and grade attained on leaving school. From such data it is estimated that 4 p.c. leave school before they have mastered their three R's; 60 p.c. reach high school entrance; 45 p.c. spend at least one year on high school work; nearly 20 p.c. finish high school; 12 p.c. go beyond high school, and 3 p.c. graduate from university. The improvement in literacy in the ten years between 1921 and 1931 was not so much in crossing the barrier above-mentioned as in raising those who do cross to higher grades. The decade was conspicuous as one of educational enthusiasm—one might call it educational inflation. The desire to spread high school education among all ranks of the population probably over-stepped the mark in attempting to spread it among all ranks of intellectual capacity as well as social ranks. This, of course, is a weakness common to all enthusiasms.

It is clear that the 4 p.c. (illiterate) is too small a figure to have much significance as an index of the educational status of the population. In a crowd of 100 persons 4 illiterates would carry little weight and probably would not be very conscious of any lack in their educational equipment. They would hear as much of what was going on in the world as they could obtain, in any case, by reading. In 1891, when there were 15 in such a crowd, it meant something. However, this is only on condition that 4 and only 4 could be found in every crowd of 100 and that, except for their illiteracy, they were the same kind as the rest. The chances of this were probably greater in 1891 than now and still more so when nearly half the population was illiterate. Then, some very intelligent and enterprising persons were unable to read, the only reason being that they never had had the opportunity of going to school. To-day, in a crowd of 100 persons over 85 years of age, we would probably find 16 illiterate persons. There is nothing remarkable in this, since these persons were of school age before 1856 when, in Canada at least, there were very few school advantages. Of the 309,400 persons in the 1931 Census who were unable to read,

over 42,000 or nearly one-seventh, were past school age at the date of Confederation. There is very little significance in the fact that they were illiterate. They were probably the same type of persons as those who could read, except that due to conditions of settlement they had had no opportunity of going to school. It is a different matter to know that there were 20,645 persons at ages 20-24 who could not read. These are past school age now but were well within school age in 1921 when the country was well settled and school facilities sufficient—at least in Canada. These must be a different type from the rest of the population. The interesting thing about them is not that they *are* illiterate but *why*. It is still more surprising that over 6,000 of them were living in urban centres and did not belong to any single province. Clearly their place of residence had nothing to do with their illiteracy. Except in the case of immigrants, these persons were living in Canada at ages 10-14 in 1921. In that year (1921) about 103,000 at ages 10-14 years were not at school for any period, of whom many, of course, were out of school because they had finished their education but it can be shown that of these 103,000 as many persons had never been to school as would explain the 20,000 illiterates ten years later. Now, the question is changed to "why were these persons never at school?" If they had gone to school, their illiteracy could be connected with their mentality but, as it was, the explanation is rendered very difficult. It will be shown later that there is no single explanation. It is probably in line with the experience in measuring any other attribute that is being gradually eliminated. At one time, so much of illiteracy was explained by the fact that there were no opportunities for school attendance that this explanation seemed to cover the whole ground. As the attribute grows smaller and smaller the few major causes are eliminated, leaving hundreds of minor causes that were not visible while the big ones were present. Ten years ago the biggest cause was race. This still holds but it is not nearly so large as then and we still have illiteracy. Another big cause that remains is age, *i.e.*, the fact that there are still living, persons who were of school age when the country was undeveloped, but we have just seen that 20,000 persons were illiterate and had never been at school at an age and time when it seemed impossible to escape going to school. At 15-19, when practically every person is still of school age and has been long enough at school to learn to read, there were 16,253 unable to read in 1931 and of these, 12,010 were at ages 10-14. It is difficult to imagine the existence of such numbers as these at the present date. Who are they? Why are they illiterate?

Distribution of Illiteracy.—To recapitulate the statement just made of illiteracy in Canada, 3·79 p.c. of the population 10 years of age and over could not read, *i.e.*, roughly 4 persons out of every 100. This, of course, pools all persons regardless of age, sex, race or geographical position. The question arises as to which of two supposed conditions would be the more desirable: (1) that these 4 were found in every group of 100 persons (10 years and over) throughout Canada or (2) that they be segregated so that most such groups would have no illiterates, while a few groups would have a large number. If we regard illiteracy as an evil which it is desirable to eradicate, the answer to the question depends upon whether it is easier to eliminate a given quantity (in this case 309,396 persons) when it is widespread or when it is segregated. In so far as illiteracy is caused by want of opportunity, clearly the best condition of elimination is that a few illiterate persons be scattered among a large number of literate persons for, under such a condition, example or imitation would bring about elimination; but "want of opportunity" under such a condition is self-contradictory. In so far as a few illiterates exist among a large number of literates under exactly the same conditions it is absurd to speak of lack of opportunity as the cause. There must be segregation if we are to admit the idea of "want of opportunity". Concepts of segregation have already been mentioned, *e.g.*, age, race, geographical distribution and sex (both age and race involving the idea of want of opportunity in the past rather than in the present). If, then, the illiterates were widespread as supposed, clearly it would be impossible to eradicate them by furnishing them with opportunity. Where they are thus widespread in small numbers there must be bed-rock of anti-social forces which is very difficult to remove. Where they are segregated—geographically or otherwise—the problem of elimination seems capable of solution.

SEGREGATION OF ILLITERACY

This, then, leads to the question of whether the 309,396 illiterates of Canada are segregated, and if so to what extent. It is necessary to answer this question in any case before bringing up such matters as provincial comparisons.

To illustrate cases of segregation, out of the 309,396 illiterates in Canada 36,533 were Indians and Eskimos. This is probably the best example of segregation. This inclusion of Indians affects provincial rates of illiteracy very markedly and probably makes comparison unfair. Indian education is a Dominion problem, not a Provincial. The Indians whose illiteracy is thus given are situated on reserves, consequently very definitely segregated. According to a measure of segregation, the Indians in Canada are more segregated than any other race except the Hebrews. The difference to provincial comparison caused by excluding and including Indians is shown in Table 1, Part II. A further analysis of provincial comparison will be made later in its proper place.

The differences in the percentage of illiteracy arising from the exclusion of the Indians for the various provinces are as follows:—

	p.c.
CANADA	0·39
Prince Edward Island	0·07
Nova Scotia	0·09
New Brunswick	0·07
Quebec	0·10
Ontario	0·19
Manitoba	0·58
Saskatchewan	0·67
Alberta	0·82
British Columbia	1·39
Yukon	19·41
Northwest Territories	15·11

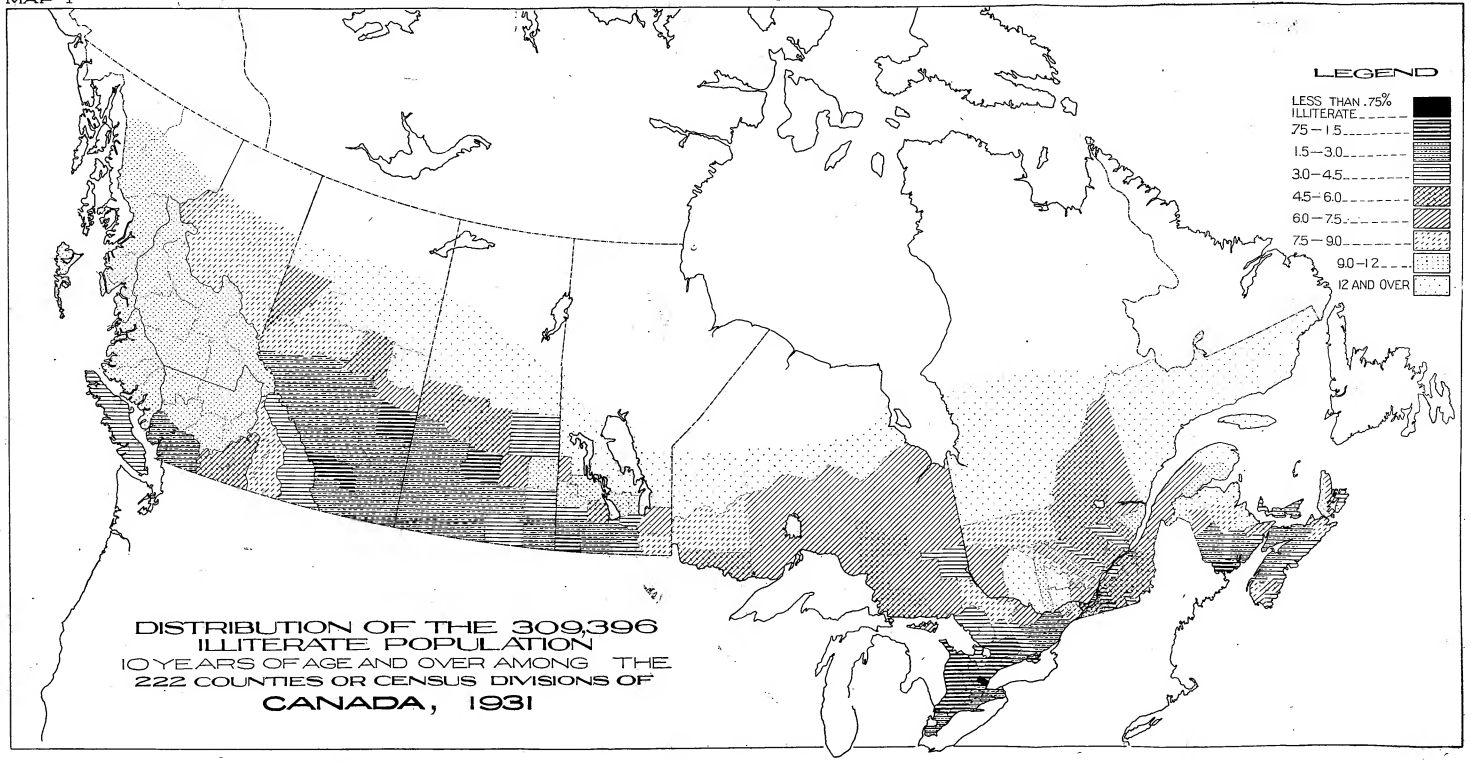
To come back to the main question of segregation, clearly it is an important matter which should be exhaustively treated. As already indicated there are several forms of segregation varying in importance in their bearing upon the connection between segregation and elimination. The most important form on *a priori* grounds would seem to be geographical segregation. If we segregate illiteracy geographically we can attack it *en masse*. In this connection a map is here given showing the segregation of illiteracy by the counties or census divisions of Canada. In this map illiteracy rates are shown under nine classes as follows:—

Less than 0·75 p.c. occurring in 1 county;
0·75- 1·5 p.c. occurring in 24 counties;
1·5 - 3·0 p.c. occurring in 53 counties;
3·0 - 4·5 p.c. occurring in 34 counties;
4·5 - 6·0 p.c. occurring in 35 counties;
6·0 - 7·5 p.c. occurring in 29 counties;
7·5 - 9·0 p.c. occurring in 15 counties;
9·0 -12·0 p.c. occurring in 14 counties;
12·0 p.c. and over occurring in 17 counties.

Now a county or census division is too large an area for purposes of a scientific measurement of segregation, since a large area like this is apt to have several degrees of segregation which are concealed when aggregated. Clearly the municipality would be a better unit both because of its smaller size and because it is a legal unit responsible to a certain extent for its own educational facilities. However, the county is the only unit for which we have data (except individual cities and towns) and although not a very good unit it will give a fair idea of the extent of the segregation.

Geographical Distribution and Segregation.—The following chart shows the number of counties having 1, 2, 3, ... p.c. illiteracy, respectively. This gives a picture of the frequency of different degrees of illiteracy which the map cannot furnish. Looking at this picture it strikes the eye that there is not much geographical segregation until we reach a percentage higher than 8. Above this percentage there are 37 scattered counties or census divisions (the Yukon and Northwest Territories being regarded as census divisions) which clearly stand apart from the main body. These 37 counties have 7·8 p.c. of the population of Canada and 81,977 or 26·5 p.c. of the 309,396 illiterates. If these counties had the same rate as the whole of Canada (3·79 p.c.) they would have 24,155 illiterates so that the remainder of the 81,977 or 57,822 may be considered definitely segregated. If this segregation were deducted from the 309,396 illiterates, Canada as a whole would have 3·08 p.c. instead of 3·79 p.c.

MAP 1

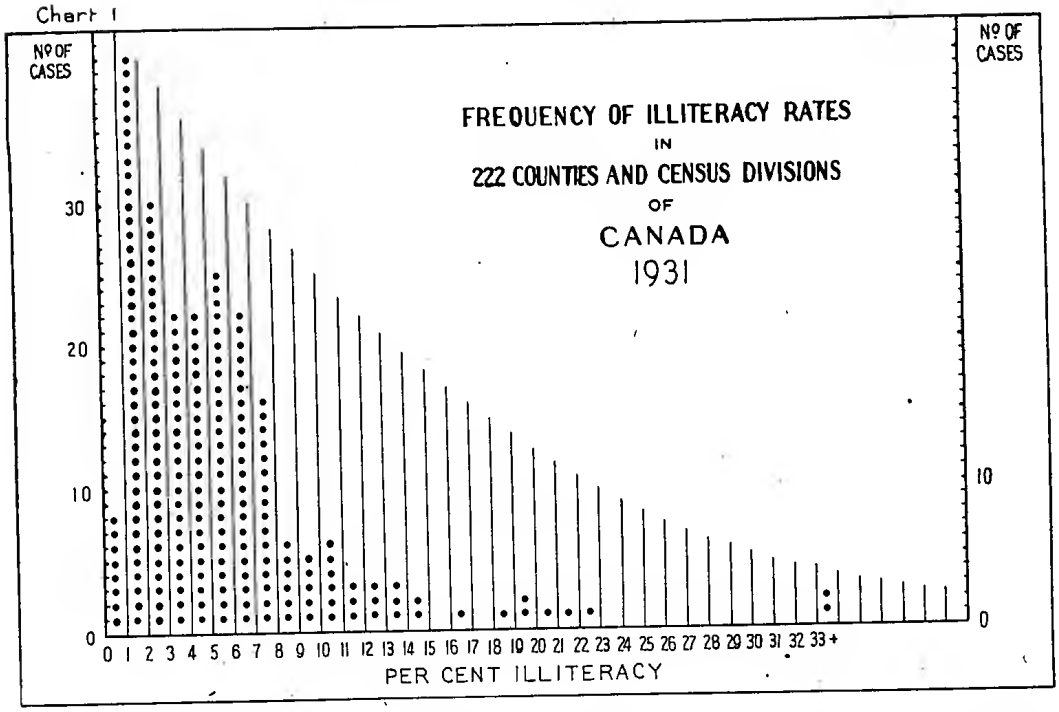


DISTRIBUTION OF THE 309,396 ILLITERATE POPULATION

10 YEARS OF AGE AND OVER AMONG THE 222 COUNTIES OR CENSUS DIVISIONS OF

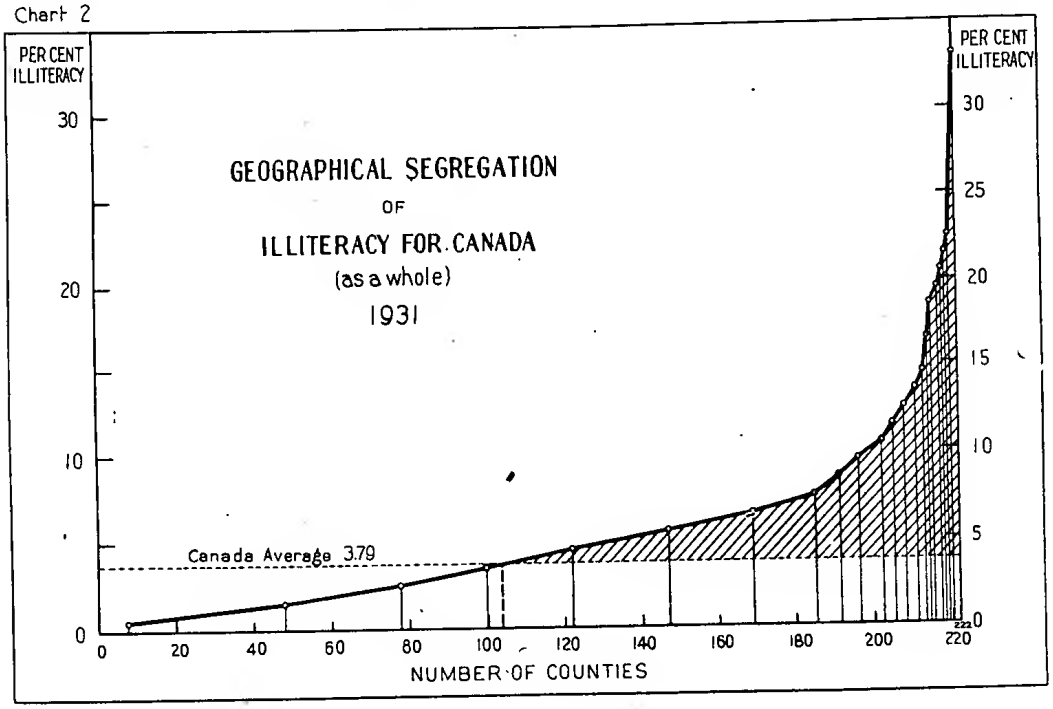
CANADA, 1931

Chart 1



With the exception of the 37 places clearly indicated on Chart 1 and mentioned as containing 81,977 of the illiterates, it is apparent that there is not much geographical segregation of illiteracy in Canada. Of course, as mentioned, the county is too large a unit. Illiteracy may be segregated within the county. An example of such segregation is Indian reserves. Still, apart from Indian reserves, it is doubtful that such internal segregation exists. It is probable that the chart presents a true picture. Up to the limit of 8 p.c., illiteracy in Canada is widespread. The number of counties with less than 1 p.c. illiteracy is far too few, and those between 1 and 8 p.c. are far too

Chart 2



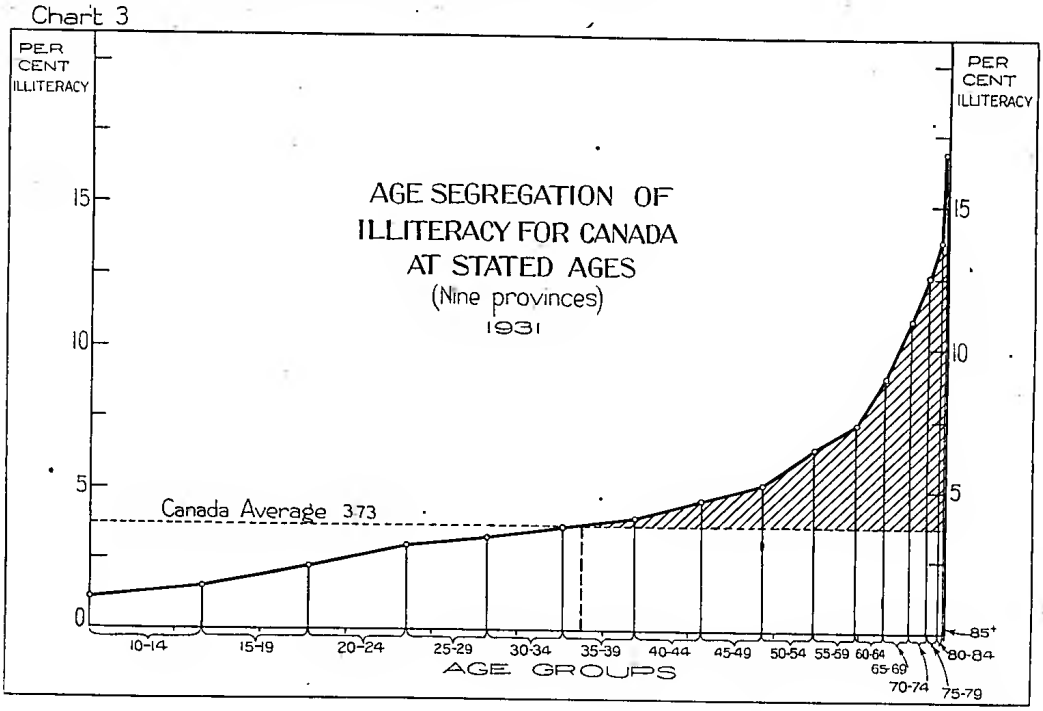
many to justify any hope that geographically, illiteracy is so segregated that it can easily be eliminated. In other words, 227,400 illiterates are spread fairly evenly over 185 counties and the 4 p.c. illiteracy of Canada cannot be said to give an exaggerated idea of the extent of the country's illiteracy.

A still clearer picture is furnished by Chart 2 on the base of which is marked off the number of counties in Canada and percentages illiterate are marked off vertically. If all the counties had 4 p.c. the picture would be in a rectangle 222 long and 4 high. The actual picture is like a topographical cross-section sloping gently upwards most of the way and then rising sharply in a peak. With the exception of this sharp rise (already pointed out in the case of the 37 places) the gradualness of the slope is remarkable. The number of counties with the average illiteracy or more is unexpectedly large.

Since it has been seen that geographical segregation of illiteracy has not proceeded to any great extent, it remains to ascertain whether there are other forms of segregation. Three such forms immediately suggest themselves, *viz.*, age, racial and rural. If illiterates tend to be confined to older ages it is clear that they are segregated to this extent. Furthermore, their elimination is certain through no other agency than time. It cannot be hastened and it cannot be stopped.

Age Segregation.—The extent to which illiteracy is segregated by age is shown in Chart 3.* This chart shows a high degree of segregation. Percentages higher than the average (3·73) are confined to 36 p.c. of the population, *viz.*, those over 40 years of age. The number of illiterates accounted for by this 36 p.c. was 186,377 out of the 304,513. If this segregated part had the same percentage illiterate as the rest, it would have 110,167, so that the difference, *viz.*, 76,210, may be considered segregated illiteracy inevitably removable by time. The schools can do nothing for this segregation; time alone will bring about the elimination.

Chart 3



It should be clearly seen that there is a great difference between the extent of segregation shown in Chart 3 (the age segregation) and that shown in Chart 2 (the geographical). In the geographical chart very little segregation was shown—the average or over obtaining in as many as 126 out of the 222 counties; in the age chart the average or over was shown in only 36 out of 100 divisions of the population separated by age.

*For the balance of the study of illiteracy in Canada it is considered advisable to take into account only the nine provinces, the Yukon and Northwest Territories being excluded because of their lack of comparability with the other provinces.

I.—NUMBER[1] AND PERCENTAGE ILLITERATE OF THE POPULATION 10 YEARS OF AGE AND OVER, BY QUINQUENNIAL AGE GROUPS, CANADA,[2] 1931

Age Group	Population 10 Years and over		Illiterates 10 Years and over	
	No.	P.C.	No.	P.C.
All ages[1]	8,155,391	100·00	304,053	3·73
100 and over	163	[3]	80	49·08
95-99	1,072	0·01	296	27·61
90-94	4,928	0·06	941	19·09
85-89	19,120	0·23	2,949	15·42
80-84	49,130	0·60	6,739	13·72
75-79	98,559	1·21	12,304	12·48
70-74	171,434	2·10	18,845	10·99
65-69	230,853	2·83	20,786	9·00
60-64	294,087	3·61	21,566	7·33
55-59	366,468	4·49	23,769	6·49
50-54	487,994	5·98	25,380	5·20
45-49	584,469	7·17	26,994	4·62
40-44	645,270	7·91	25,728	3·99
35-39	687,594	8·43	24,798	3·61
30-34	707,825	8·68	22,858	3·23
25-29	785,294	9·63	23,162	2·95
20-24	910,121	11·16	20,183	2·22
15-19	1,038,363	12·73	15,563	1·50
10-14	1,072,647	13·15	11,112	1·04

[1]Statod ages only. [2]Nino provinces only. [3]Less than one one-hundredth of one per cent.

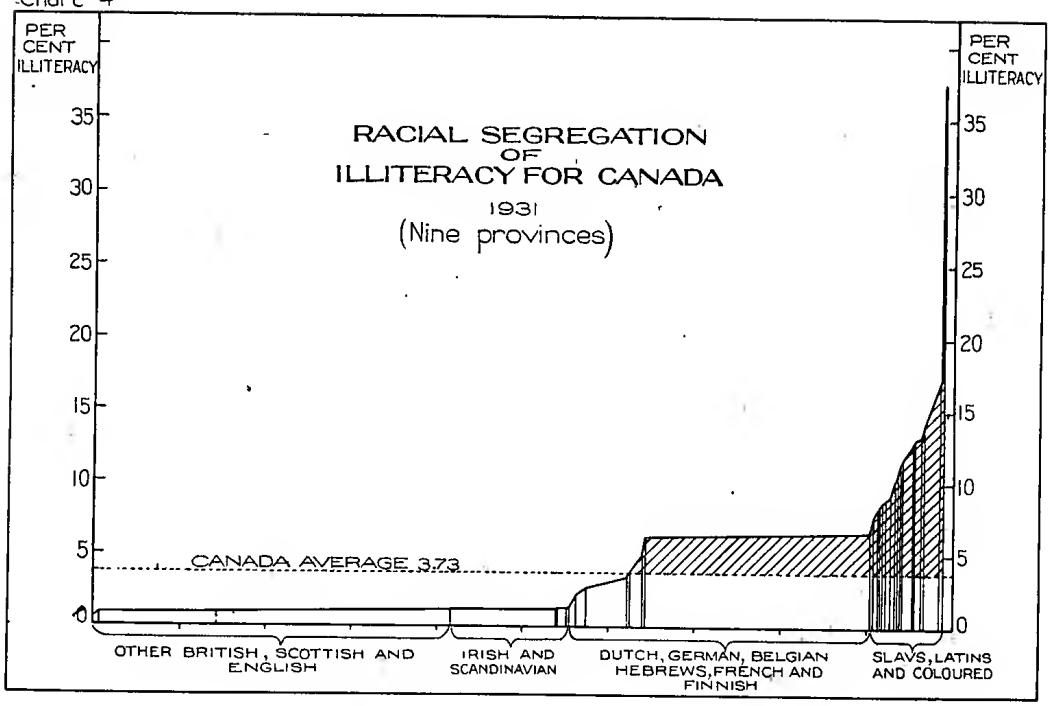
Racial Segregation.—It is necessary first to decide whether racial scgregation of illiteracy is segregation at all, or any more segregation than exists in any chance group of people. Thc only justification for accepting such a concept as racial segregation of illiteracy would be that the raccs held themselves apart and were responsible for their own illiteracy and that some means could be uscd or some process set at work which would eliminate *en masse* this form of illiteracy. If thc races mingled frcely then we could not accept the theory concept of racial segregation, for in this case the individual of one race would be in the same position as that of another. As a matter of fact, races do keep themselves segregated even in the case of the Canadian born, while there is a distinct segregation in the case of the foreign born by the mere accident of country of birth. Conscquently it will bc necessary to chart the racial segregation of illitcracy in the same way as the geographical and age. Chart 4 needs no introductory explanation as it is on exactly the samc principle as Chart 3. The races are severally represented as percentages of the population so that the total population shown horizontally is 100 p.c.

II.—NUMBER AND PERCENTAGE ILLITERATE OF THE POPULATION 10 YEARS OF AGE AND OVER, BY RACIAL ORIGIN, IN DESCENDING ORDER OF ILLITERACY RATE, CANADA[1], 1931

Racial Origin	Population 10 Years and over		Illiterates 10 Years and over	
	No.	P. C.	No.	P. C. of Race
All raees	8,159.059[2]	100·00	304,513[3,4]	3·73
Indian nnd Eskimo	84,306	1·03	31,710	37·61
Chinese	43,839	0·54	7,627	17·40
Ukrainian	168,345	2·06	23,463	13·94
Other Asiatie	10,961	0·13	1,450	13·23
Russian	64,880	0·80	8,528	13·14
Roumanian	21,290	0·26	2,688	12·63
Polish	112,282	1·38	13,193	11·75
Japanese	16,502	0·20	1,849	11·20
Austrian	37,432	0·26	3,929	10·50
Yugoslavie	13,384	0·16	1,403	10·48
Italian	71,953	0·88	6,580	9·14
Hungarian	31,879	0·39	2,823	8·86
Czech and Slovak	24,719	0·30	2.098	8·49
Various	540	0·01	45	8·33
Negro	15,112	0·19	1,229	8·13
Other European	19,124	0·23	1,449	7·58
Finnish	38,107	0·47	2,517	6·61
Freneh	2,157,760	26·45	133,300	6·18
Unspceified	6,041	0·07	300	4·97
Hebrew	130,218	1·60	4,955	3·81
Belgian	21,496	0·26	731	3·40
German	368,179	4·51	9,464	2·57
Dutch	115,401	1·41	2,326	2·02
Swedish	66,114	0·81	815	1·23
Danish	27,371	0·34	317	1·16
Norwegian	74,095	0·91	814.	1·10
Iceland ie	15,593	0·19	172	1·10
Irish	1,006,234	13·02	10,825	1·08
English	2,239,212	27·44	18,515	0·83
Scottish	1,105,970	13·56	9,182	0·83
Other British	50,720	0·62	209	0·41

[1]Nine provinees only. [2]Ineludes 3,668 of unstated age.
[3]Ineludes 460 of unstated age. [4]Ineludes 7 of unstated racial origin.

Chart 4



The racial segregation is slightly less than the age, *i.e.*, percentages greater than the average (3·73) are confined to 38 p.c. of the population whereas in the age it was confined to 36 p.c. This 38 p.c. accounted for 251,143 of the total illiterates which, excluding the Yukon and Northwest Territories, were 304,513, *i.e.*, accounted for about 82 p.c. of the illiterates of the nine provinces. If we give this 38 p.c. the same illiteracy as the average of Canada (3·73) it would have 114,462, so that over 136,000 (the area represented by the shaded portion of the chart) illiterates may be said to be accounted for by racial segregation, a much larger number than that by geographical or age. Of course it must be remembered that the geographical, age and racial figures are not mutually exclusive. Further on, an attempt will be made to separate them.

Chart 4 has many interesting points. There are four definite steps in racial segregation: (1) the "other" British, Scottish and English; (2) the Irish, Scandinavians, Dutch, Germans, Belgians, Hebrews and unspecified; (3) the French and Finnish, and (4) the Slavs, Latins and Coloured. This is clearly shown in Statement II, immediately preceding the chart.

Now, is the racial segregation capable of being attacked in the same way as the geographical or of yielding to time in the same way as the age, or is there any steady process of elimination? Decidedly so. The eliminating factor in this case is Canadian or British birth. Especially under immigration restrictions, the proportion Canadian- (or British-) born of the various races increases very rapidly. The actual progress of elimination will be shown in Chapter III.

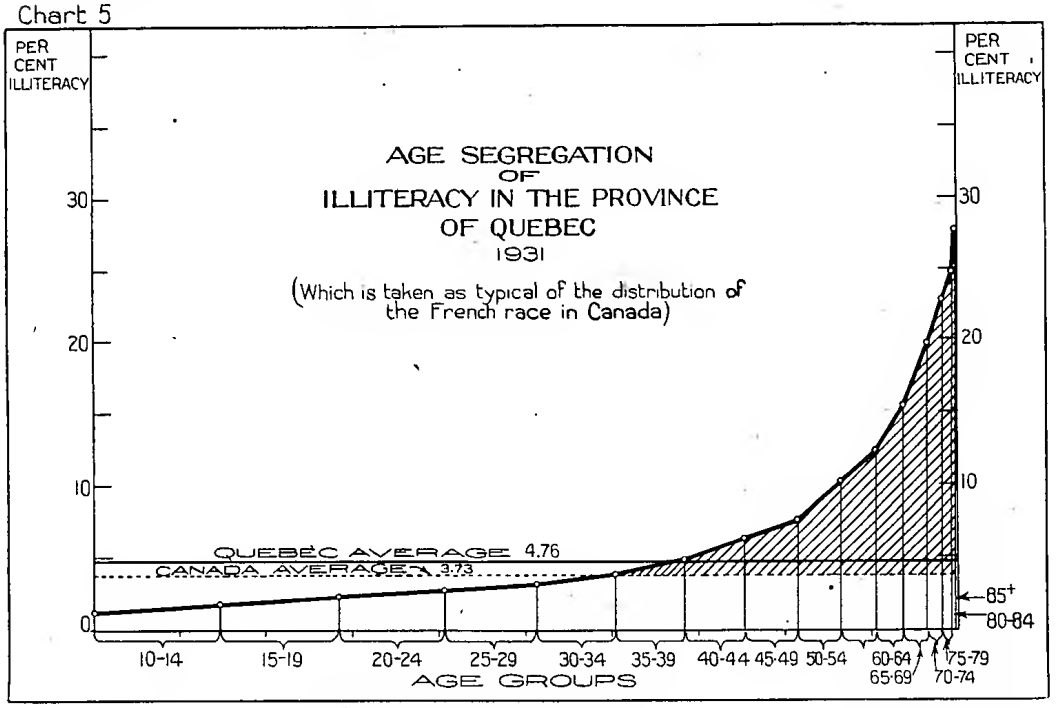
In the racial segregation chart is noticeable a certain plateau, *viz.*, that of the French and Finnish. It is only fair to point out that concealed by this plateau are other forms of segregation, one of them particularly heavy, *viz.*, age. While the percentage illiterate among the French race 10 years of age and over is a little over 6, this percentage is really not representative if a large proportion of the illiterates are confined to older ages, since time will inevitably remove these illiterates without any further effort on the part of schools. To emphasize this point Chart 5 below shows the segregation by age in the province of Quebec, the data of which province come sufficiently near to representing the whole of the French race.

III.—NUMBER AND PERCENTAGE[1] ILLITERATE OF THE POPULATION 10 YEARS OF AGE AND OVER, BY QUINQUENNIAL AGE GROUPS, QUEBEC, 1931

Age Group	Population 10 Years and over		Illiterates 10 Years and over	
	No.	P.C.	No.	P.C. of Age Group
All ages	2,166,867	100·00	103,103	4·76
100 and over	22	[2]	10	45·45
95-99	237	0·01	88	37·13
90-94	1,168	0·05	360	30·82
85-89	4,587	0·21	1,213	26·44
80-84	12,713	0·59	3,154	24·81
75-79	24,415	1·13	5,569	22·81
70-74	40,353	1·86	7,970	19·75
65-69	54,703	2·52	8,435	15·42
60-64	69,300	3·20	8,541	12·32
55-59	86,975	4·01	8,889	10·22
50-54	110,620	5·11	8,480	7·67
45-49	131,636	6·07	8,282	6·29
40-44	152,687	7·05	7,535	4·93
35-39	174,068	8·03	6,759	3·88
30-34	194,178	8·96	6,221	3·20
25-29	226,422	10·45	6,147	2·71
20-24	267,116	12·33	6,172	2·31
15-19	299,858	13·84	5,593	1·87
10-14	315,809	14·57	3,685	1·17

[1]Percentages based on stated ages only.
[2]Less than one one-hundredth of one per cent.

Chart 5



It is seen in this chart that the illiteracy of Quebec is raised above the average of the nine provinces solely by persons over 35 years of age and above its own average by persons over 40; also, that there is a very heavy segregation towards the older ages, *e.g.*, out of the 103,103 illiterate persons over 10 years of age, 75,285 were over 35 years of age and 68,526 were over 40 years of age, *i.e.*, about 66 p.c. of the illiterates were over 40, while less than 32 p.c. of the population 10 years of age and over was over this age. If we give this 32 p.c. the average illiteracy of Canada at all ages 10 years and over, it would have 25,715 illiterates, so that the difference of 42,811 is segregated over the ages of 40 and removable by a short lapse of time without any effort on the part of schools. Meanwhile, of course, the schools will be at work reducing the illiteracy of the rest.

To go hack to the plateau on Chart 4, it is now clear that there is a very considerable segregation concealed. Similarly with the other races, there are age, geographical, and particularly foreign-birth forms of segregation concealed in the racial picture.

Rural Segregation.—Rural segregation cannot be illustrated as easily as the other forms because there are only two things to compare, *i.e.*, rural and urban, and because the dividing line between rural and urban is very indefinite in so far as the hearing upon illiteracy is concerned. Rural areas contain a great variety of illiteracy rates, a large proportion of which are geographical rather than rural as such. However, we cannot avoid distinguishing between urban and rural illiteracy and the inference that the rural represents lack of opportunity. The percentage illiterate (10 years and over) in rural parts of Canada as a whole (Yukon and Northwest Territories included) was 5·58 and in urban 2·33. The rural population 10 years of age and over was 3,664,696 or about 45 p.c. of the total population 10 years and over and the number of rural illiterates at these ages was 204,471, leaving about 105,000 urban illiterates. With the same percentage illiteracy as the average of Canada the rural parts would have 138,892 so that 65,579 illiterates might he considered as rural segregation in 45 p.c. of the population. However, this idea of segregation is rather far fetched. It is only mentioned here for purposes of analogy with the other cases of segregation illustrated.

MEASUREMENT OF THE MAJOR INFLUENCES CONTRIBUTING TO ILLITERACY IN CANADA

In discussing segregation of illiteracy four major influences were mentioned, one of which could hardly he considered a case of segregation. These were: (1) geographical; (2) age; (3) race; (4) rural residence. To these may now he added sex for the sole reason that males happen to have a higher percentage illiterate than females. It may he mentioned here in anticipation of what follows that this sex influence will turn out to he almost illusory, being merely a resultant of the accident of distribution among the other influences. Now is it possible to measure the relative weights of these influences? Clearly we must abandon the first (geographical) for the reason already given, *viz.*, that the county is too large a division. An attempt will now he made to measure the other four.

Tables 3and 4, Part II, are intended to give a complete picture of these influences. Table 3 gives illiteracy in percentages, by age, sex, rural and urban and provinces. Table 4 gives the racial in addition to the age, sex, rural and urban picture, distinguishing, however, only between British and other races, and the ages 10-14 and older ages. A justification for this distinction of race has already been demonstrated in Chart 4, but the main reason for it here is to pair off each influence with its opposite.

To take first Table 4, where the comparison is in pairs, it is seen (in the Canada total) that the urban females of the British races at the ages 10-14 years have 0·19 p.c. illiterate. This we may consider for the time being as an irreducible minimum. The influences responsible for this figure may he regarded as legion and individually unimportant, *e.g.*, 19 per 10,000 or 1 in 526 is probably smaller than the proportion of feeble-minded in the country, to say nothing of accidents of all sorts preventing school attendance. In direct contrast to this we have the rural males of other races at older ages with 11·63 p.c. illiterate. Here we have a combination of major causes—rural residence, sex, race and age, making 11·63 p.c., sixty-one times as large as 0·19. Can we measure the separate contribution of each of the four major causes to this 61? The principle upon which such a measurement is based, is as follows: if we consider separately (1) British and other races; (2) age 10-14 and all older ages; (3) rural and urban, and (4) males and females, and take the percentage illiterate of each pair under a variety of conditions—ideally, under all possible conditions but, actually, a very large variety will do—the unweighted average illiteracy of each of the pairs should furnish a fair comparison. The unweighted average is used so as to give no one condition any advantage over the other.

In Tables 3 and 4 such conditions are represented. In Table 3, the percentages illiterate of the males and females, rural and urban, are shown for every quinquennial age group in the nine provinces, *i.e.*, the males and females are compared under 318 conditions; similarly, rural and urban. In Table 4, the British race is compared with other races and the age group 10-14 is compared

with older ages for rural and urban in the nine provinces, *i.e.*, under 72 different conditions. These two tables, as they are, furnish material for comparison even without further analysis.

To carry the analysis further, however, the various conditions are differentiated quantitatively. In other words instead of adding up the percentages British and other races, rural and urban, male and female and by provinces, we arrange the percentage illiterate of the other races corresponding to the percentage illiterate of the British in group intervals according as the percentage illiterate of the other races is less than 1, 1, 2, 3 p.c. and so on. This shows what relationship exists at different stages and suggests what kind of average figure should be used in the comparison. For smooth results cumulative intervals are used instead of individual. In the four following statements a comparison is made between: (1) all other races with British; (2) older ages with age 10-14; (3) rural with urban, and (4) males with females.

IV.—ILLITERACY OF OTHER RACES COMPARED WITH THAT OF BRITISH RACES UNDER 72 DIFFERENT CONDITIONS, ASSUMING A SAMPLE OF 100 PERSONS BEING TAKEN FROM EACH CONDITION, CANADA, 1931

P.C. Illiterate	Number of Conditions	Number Illiterate			
		Aggregate		Average	
		Other Races	British Races	Other Races	British Races
Under 1	16	7·61	3·84	0·48	0·24
" 2	22	16·33	7·37	0·74	0·34
" 3	30	35·55	12·43	1·18	0·41
" 4	33	45·97	15·50	1·39	0·47
" 5	34	50·89	16·66	1·50	0·49
" 6	42	95·01	23·62	2·26	0·56
" 7	46	121·59	27·07	2·64	0·59
" 8	52	165·69	32·66	3·19	0·63
" 9	58	215·85	38·37	3·72	0·66
" 10	59	225·42	39·54	3·82	0·67
" 11	61	246·06	44·24	4·03	0·73
" 12	64	280·72	47·69	4·39	0·75
" 13	66	305·39	53·68	4·63	0·81
" 15	67	319·97	57·87	4·78	0·86
" 16	68	335·76	58·43	4·94	0·86
" 17	70	368·56	60·56	5·27	0·87
23 plus	72	420·90	64·76	5·85	0·90

V.—ILLITERACY OF OLDER AGES COMPARED WITH THAT OF AGES 10-14 UNDER 72 DIFFERENT CONDITIONS, ASSUMING A SAMPLE OF 100 PERSONS BEING TAKEN FROM EACH CONDITION, CANADA, 1931

P.C. Illiterate	Number of Conditions	Number Illiterate			
		Aggregate		Average	
		Older Ages	10-14 Years	Older Ages	10-14 Years
Under 1	22	10·75	5·37	0·49	0·24
" 2	27	18·40	7·87	0·68	0·29
" 3	32	29·97	11·11	0·94	0·35
" 4	35	40·30	14·40	1·15	0·41
" 5	36	44·49	15·81	1·24	0·44
" 6	45	94·15	23·87	2·09	0·53
" 7	49	120·73	25·85	2·46	0·53
" 8	53	150·15	29·95	2·83	0·57
" 9	58	192·13	36·54	3·31	0·63
" 10	59	201·70	37·64	3·42	0·64
" 11	61	222·34	43·41	3·64	0·71
" 12	64	257·00	50·00	4·02	0·78
" 13	66	281·67	54·16	4·27	0·82
" 15	67	296·25	58·00	4·42	0·87
" 16	68	312·04	60·70	4·59	0·89
" 17	70	344·84	73·80	4·93	1·05
23 plus	72	397·18	88·48	5·52	1·23

VI.—ILLITERACY OF RURAL COMPARED WITH THAT OF URBAN UNDER 317 DIFFERENT CONDITIONS, ASSUMING A SAMPLE OF 100 PERSONS BEING TAKEN FROM EACH CONDITION, CANADA, 1931

P.C. Illiterate	Number of Conditions	Number Illiterate			
		Aggregate		Average	
		Rural	Urban	Rural	Urban
Under 1	4	3·09	1·88	0·77	0·47
" 2	29	41·84	18·24	1·44	0·63
" 3	53	102·02	51·89	1·92	0·98
" 4	79	192·44	98·70	2·44	1·25
" 5	104	305·10	159·33	2·93	1·53
" 6	124	416·27	218·13	3·36	1·76
" 7	138	507·29	265·59	3·68	1·92
" 8	157	648·40	325·35	4·13	2·07
" 9	176	809·36	424·87	4·60	2·41
" 10	186	904·15	471·39	4·86	2·53
" 11	198	1,029·14	508·76	5·20	2·57
" 12	208	1,144·80	557·11	5·50	2·68
" 13	213	1,207·18	581·19	5·67	2·73
" 14	217	1,261·02	601·12	5·81	2·77
" 15	223	1,346·55	627·24	6·04	2·81
" 16	233	1,502·58	740·43	6·45	3·18
" 17	240	1,618·03	780·50	6·74	3·25
" 18	245	1,706·18	803·75	6·96	3·28
" 19	254	1,873·29	863·42	7·38	3·40
" 20	257	1,931·89	885·20	7·52	3·44
" 21	262	2,033·96	933·69	7·76	3·56
" 22	271	2,227·45	995·70	8·22	3·67
" 23	275	2,317·07	1,024·26	8·43	3·72
23 plus	317	3,808·38	1,640·51	12·01	5·18

VII.—ILLITERACY OF MALES COMPARED WITH THAT OF FEMALES UNDER 318 DIFFERENT CONDITIONS, ASSUMING A SAMPLE OF 100 PERSONS BEING TAKEN FROM EACH CONDITION, CANADA, 1931

P.C. Illiterate	Number of Conditions	Number Illiterate			
		Aggregate		Average	
		Males	Females	Males	Females
Under 1	19	9·78	12·23	0·51	0·64
" 2	44	48·02	46·01	1·09	1·05
" 3	92	166·57	142·50	1·81	1·55
" 4	122	270·73	228·85	2·22	1·88
" 5	154	413·69	388·76	2·69	2·52
" 6	177	538·86	509·04	3·04	2·88
" 7	191	628·66	594·94	3·29	3·11
" 8	206	739·42	707·52	3·59	3·43
" 9	223	884·13	849·85	3·96	3·81
" 10	227	922·34	885·75	4·06	3·90
" 11	238	1,037·10	998·41	4·36	4·20
" 12	246	1,128·54	1,086·76	4·59	4·42
" 13	251	1,191·22	1,163·67	4·75	4·64
" 14	255	1,246·11	1,199·15	4·89	4·70
" 15	260	1,317·30	1,275·41	5·07	4·91
" 16	264	1,379·78	1,348·34	5·23	5·11
" 17	268	1,445·42	1,403·75	5·39	5·24
" 18	274	1,550·46	1,518·11	5·66	5·54
" 19	278	1,624·79	1,595·65	5·84	5·74
" 20	281	1,683·39	1,661·55	5·99	5·91
" 21	284	1,744·90	1,706·34	6·14	6·01
" 22	288	1,830·47	1,799·37	6·36	6·25
" 23	290	1,875·04	1,829·16	6·47	6·31
23 plus	318	2,837·40	2,765·93	8·92	8·70

The next step is to arrive at a fair average figure comparing each set. Obviously the same kind of average will not apply to all alike and each of the four results must be treated separately.

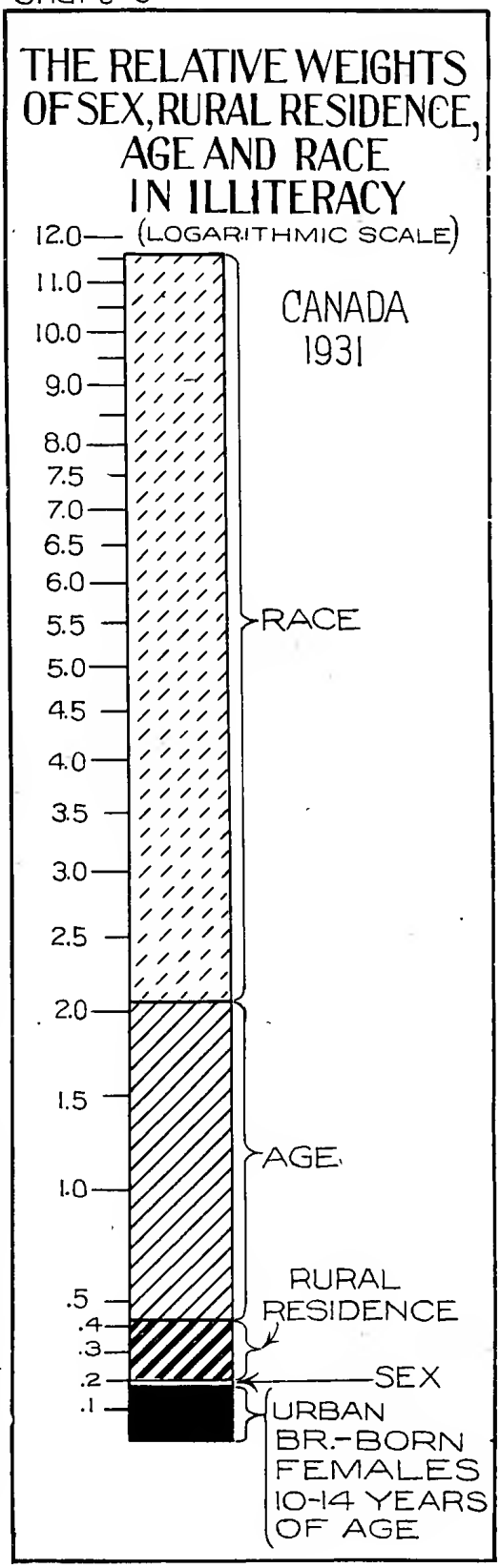
Male and Female.—This set is taken first because of its simple behaviour. It will be seen that no bias exists in the difference between male and female as we pass from lower to higher percentage illiterate males. Throughout the range there is almost a constant difference of about 0·16 p.c. Since we have to deal with ratios, this would mean that the ratio would change very drastically according as the percentage of the males was high or low. Since, however, the difference is very small it seems safe to take the ratio as that of the straight average, so that male illiteracy equals 1·03 times female illiteracy. In other words, there is practically no difference in illiteracy between males and females. The reason why males are slightly more illiterate than females in the total population is because of the distribution of males under more unfavourable circumstances than those of the females—more rural, more other races than British, and so on. This disposes fairly conclusively of one important aspect of illiteracy.

Rural and Urban.—In comparing the illiteracy of rural and urban it is remarkable that there is almost a constant ratio between them. Where the illiteracy of rural is low, that of urban is low; where the one is high the other is high; the correlation is almost perfect. This is not altogether because of the particular set of conditions taken—age for age, etc.; it seems to apply quite generally. It is difficult to understand the reason or reasons. If the rural parts of a certain community are more illiterate than the rural parts of another, why should the urban parts generally follow suit? A plausible reason is that persons of the same type live in or pass back and forth in both rural and urban parts. The ratio of rural to urban illiteracy would seem to be safely put at 2·08, *i.e.*, rural is 2·08 times as illiterate as urban, other conditions being constant.

Older Ages and Ages 10-14.—The age group 10-14 is taken in comparison with all older ages because this age shows the least illiteracy. It is, so to speak, the stage of perfection to which the advantages of our present school system have carried us. Of course, there is no reason why there should be *any* illiteracy at this age since the youngest member of it is old enough to have learned to read. In spite of this there is a wide variety of rates of illiteracy at this age under different conditions. Urban females in the aggregate of the nine provinces show 0·33 p.c. illiterate while rural males show 1·86 p.c. and in one province as much as 4·21 p.c. When the illiteracy at 10-14 is compared with that at older ages by the same means as used in the other comparisons it is found that the ratio is almost constant. The older ages are 5·09 times as illiterate as the ages 10-14.

British Races and Other Races.—The British races are taken as the standard because they show the lowest percentage illiteracy. It is rather remarkable, however, that although they are consistently less illiterate than the aggregate of other races, their illiteracy is higher where that of the other races is higher and lower where the latter is lower, and this is an almost constant ratio. In other words the urban British and the urban other races at the younger age are both low, but the British lower by a certain ratio than the other races. The rural British are higher than the urban British at the same age and the rural other races are more illiterate than the rural British by the same ratio as before and so on. This ratio is 5·65.

Chart 6



We have now established four ratios, *viz.*, (in order of size) (1) other races to British, 5·65; (2) older ages to 10-14, 5·09; (3) rural to urban, 2·08, and (4) male to female, 1·03. When these ratios are multiplied they come to 61·61 and ought, if satisfactorily correct, to tell us the illiteracy of the rural male other races at older ages, if we know that of the urban female British at 10-14. The illiteracy of the latter in Canada is 0·19 p.c. Multiplying this by 61·61 it comes to 11·71. Now this is almost exactly the illiteracy of the rural male other races at older ages in Canada which is 11·63 p.c. so that these ratios seem to stand the test.

ILLITERACY BY PROVINCES

Common usage compares figures of illiteracy for provinces. Enough has already been said to indicate that this is an undesirable and unfair practice. The figures of illiteracy of any province do not reflect the educational status or system of that province. There would be some point in comparing the illiteracy for the same age, sex and race by provinces, but not the total unqualified percentages. The total percentage may mean that there are more older persons in one province than another, *e.g.*, suppose we compare by provinces the illiteracy of males at ages 70-74, *i.e.*, persons born before Confederation, and of males 10-14. This comparison is as follows:—

VIII.—NUMERICAL AND PERCENTAGE COMPARISON OF ILLITERACY OF MALES 70-74 YEARS OF AGE (BORN BEFORE CONFEDERATION) AND THOSE 10-14 YEARS OF AGE, CANADA AND PROVINCES, 1931

Province	Age Group						
	70-74			10-14			10 and over
	Total	Illiterate		Total	Illiterate		P.C. Illiterate
		No.	P.C.		No.	P.C.	
	MALES						
CANADA	88,581	11,106	12·54	542,930	6,673	1·23	4·32
Prince Edward Island	1,250	103	8·24	4,790	34	0·71	3·09
Nova Scotia	5,677	616	10·85	28,662	396	1·38	4·92
New Brunswick	4,150	757	18·24	23,756	759	3·19	8·75
Quebec	20,218	5,044	24·95	158,149	2,120	1·34	6·21
Ontario	35,370	2,205	6·23	161,623	933	0·58	2·71
Manitoba	5,148	622	12·08	38,968	460	1·18	4·05
Saskatchewan	5,507	796	14·45	55,606	589	1·06	3·66
Alberta	4,595	464	10·10	40,458	430	1·06	3·05
British Columbia	6,539	467	7·14	30,180	463	1·53	4·18
Yukon	104	18	17·31	158	76	48·10	15·88
Northwest Territories	23	14	60·87	580	413	71·21	54·62

In examining this statement it is necessary to bear in mind that the school advantages of these two sets of persons cannot be comparable in any way. Further, it is unlikely that the persons over 70 in 1931 in the four western provinces and the Yukon were born in those provinces or living there when at school age. The percentage illiterate in a province, therefore, contains various ingredients like the one shown in these figures that have little or nothing to do with the educational achievement of the province.

Recalling what has already been said about segregation and the influences of race, age and rural and urban distribution, it will be self-evident that the different provinces are differently affected by these, to say nothing of the geographical distribution of the population, *i.e.*, it is well known that some provinces have outlying parts recently settled and consequently without school facilities. It is clear that the province as a political unit controlling its education cannot be considered responsible for these influences. One outstanding case has already been mentioned, *viz.*, that the provinces are not responsible for the education of the Indians on reserves.

It will be useful to see how the provinces compare, first, under actual conditions of distribution of the elements in the population which make up the major influences in illiteracy and, secondly, when these conditions of distribution are supposed to be uniform throughout the nine provinces. This is not really a matter of comparing the provinces but rather of showing how much of the difference between provinces is due to distribution.

Let us first suppose that each of the nine provinces had the same distribution as the aggregate of the nine provinces in the matter of age, sex, race and rural and urban residence. In this comparison we are taking only pairs, *viz.*, the British race and all other races; the ages 10-14 and all other ages, while, of course, the sexes and rural and urban are naturally in pairs. Let us suppose that each of these pairs had the same percentages illiterate as actually obtain in each province, *e.g.*, the age group 10-14 urban females of the British race in the province of Ontario has 0·12 p.c. illiterate and Ontario has 2·35 p.c. of its population (10 years and over) in these categories while the nine provinces as a whole have 1·68 p.c. in these categories. Let Ontario be supposed still to have 0·12 p.c. illiterate in this group, but to have the same proportion of the population in this as the whole of Canada. Manitoba has 0·18 p.c. illiterate in this group while the group is 1·58 p.c. of the population (10 years and over) of the province. Let us suppose that Manitoba also still has its own group illiteracy but that the group is the same proportion of the population as in the whole of Canada (and of course, Ontario); similarly with all the other provinces and all other groups. What would be the comparative percentage of illiteracy in each of the nine provinces thus standardized? It may be mentioned that this is an orthodox method of standardization. The results of this standardization are shown in comparison with those of actual conditions in Statement IX following:—

IX.—ILLITERACY OF THE NINE PROVINCES STANDARDIZED[1] FOR RACIAL, SEX, RURAL AND URBAN AND AGE DISTRIBUTION, CANADA, 1931

Province	Population 10 Years and over	Illiterate				Rank	
		No.		P.C.			
		Standardized	Actual	Standardized	Actual	Standardized	Actual
CANADA	8,159,059	332,567	304,513	4·08	3·73	-	-
Prince Edward Island	69,333	2,947	1,835	4·25	2·65	6	2
Nova Scotia	402,401	22,092	17,139	5·49	4·26	7	6
New Brunswick	310,316	21,474	21,440	6·92	6·91	9	9
Quebec	2,167,517	84,316	103,212	3·89	4·76	4	8
Ontario	2,791,072	102,990	64,157	3·69	2·30	3	1
Manitoba	557,806	23,372	24,876	4·19	4·46	5	7
Saskatchewan	705,350	23,700	29,097	3·36	4·13	2	5
Alberta	572,129	17,679	19,669	3·09	3·44	1	3
British Columbia	583,135	33,997	23,088	5·83	3·96	8	4

[1]To the population distribution of Canada (nine provinces) as a whole is applied severally the specific illiteracy rates of each of the nine provinces.

In the above statement the most important feature revealed is shown in the last two columns where the standardized and actual illiteracy rank of the provinces are compared. What is brought out in these columns is the fact that some provinces are now favourably situated by their distribution (of age, sex, etc.), while others are unfavourably situated. Those that would be better off, *i.e.*, have a lower illiteracy rate with the distribution of Canada than with their own, are unfavourably situated; those that would be worse off are favourably situated. From this it follows that, at present, Quebec, Manitoba, Saskatchewan and Alberta are unfavourably situated, so that the present illiteracy of these provinces is raised by the unfavourable distribution of their population, because if they had Canada's population and their own specific rates of illiteracy their illiteracy would be much less than it is now. Consequently it is to the credit of these provinces that they have made more progress than was to be expected. This must not, however, be construed as a matter of educational system—it is far more than that; we could only compare educational systems if we could place the same individuals or individuals of exactly the same kind, under each of these systems. A standard of education among a group of individuals may not be due to the educational system of the province, but to such things as imitation, natural ability, provincial *esprit de corps*, etc.

On the other hand Prince Edward Island, Nova Scotia, Ontario and British Columbia are favourably situated by their population distribution. The case of British Columbia, however, is misleading. The fact that the conditions have been compared only in pairs, particularly British races against other races, makes the comparison imperfect. British Columbia has a very favourable distribution of British races but it is unfavourably situated in the matter of other races, a fact which the table does not show. To bring this out would necessitate taking all the races separately instead of merely British and "other races". British Columbia has a large proportion of Indians and Orientals and their illiteracy is exceptionally high.

To remove misleading features of this kind let us compare the provinces standardized for age, sex, rural and urban, but not for race. The age groups in this case are not 10-14 and other ages, but each of the quinquennial groups over 10 years. The results are shown in Statement X following.

X.—ILLITERACY OF THE NINE PROVINCES STANDARDIZED[1] FOR SEX, RURAL AND URBAN AND AGE (QUINQUENNIAL GROUPS) DISTRIBUTION, CANADA, 1931

Province	Population 10 Years and over[2]	Illiterate				Rank	
		No.		P.C.			
		Standardized	Actual	Standardized	Actual	Standardized	Actual
CANADA	8,155,391	303,496	304,053	3·72	3·73	-	-
Prince Edward Island	69,326	1,798	1,835	2·59	2·65	2	2
Nova Scotia	402,287	16,211	17,127	4·03	4·26	5	6
New Brunswick	310,248	16,874	21,436	5·44	6·91	9	9
Quebec	2,166,867	113,321	103,103	5·23	4·76	8	8
Ontario	2,790,201	67,007	64,100	2·40	2·30	1	1
Manitoba	557,665	23,258	24,865	4·17	4·46	7	7
Saskatchewan	705,161	24,300	29,073	3·45	4·12	4	5
Alberta	572,011	17,231	19,656	3·01	3·44	3	3
British Columbia	581,625	23,496	22,858	4·04	3·93	6	4

[1]To the population distribution of Canada (nine provinces) as a whole is applied severally the specific illiteracy rates of each of the nine provinces.
[2]Stated ages only.

Again, examining the last two columns and remembering that there is no standardization for race, we see that only Nova Scotia and Saskatchewan are unfavourably situated while British Columbia alone is favourably situated. The remainder show no perceptible change. This shows that it was not altogether British races that favoured British Columbia in the preceding table, but age distribution as well.

In the third place let us suppose that all the handicaps of distribution had been *removed* instead of standardized as in the two preceding statements. We do this by allowing for each handicap the ratio shown on page 602. This premises that all the ages, races, etc., in each province had the same illiteracy as British urban females at ages 10-14. The results are shown in the following statement.

XI.—ILLITERACY OF THE NINE PROVINCES COMPARED AFTER CORRECTING FOR HANDICAPS OF SEX, AGE, RURAL DISTRIBUTION AND RACE, CANADA, 1931

Province	Population 10 Years and over	Illiterate				Rank	
		No.		P.C.			
		Corrected	Actual	Corrected	Actual	Corrected	Actual
CANADA	8,159,059	12,652	304,513	0·16	3·73	-	-
Prince Edward Island	69,333	152	1,835	0·22	2·65	7	2
Nova Scotia	402,401	1,419	17,139	0·35	4·26	9	6
New Brunswick	310,316	928	21,440	0·30	6·91	8	9
Quebec	2,167,517	3,489	103,212	0·16	4·76	6	8
Ontario	2,791,072	3,640	64,157	0·13	2·30	4	1
Manitoba	557,806	793	24,876	0·14	4·46	5	7
Saskatchewan	705,350	887	29,097	0·13	4·13	2	5
Alberta	572,129	590	19,669	0·10	3·44	1	3
British Columbia	583,135	754	23,088	0·13	3·96	3	4

In this case, New Brunswick, Quebec, Manitoba, Saskatchewan, Alberta and British Columbia are shown to be handicapped while Prince Edward Island, Nova Scotia and Ontario are favourably situated. In all three statements it is seen that Ontario is favourably situated. This is important in view of the fact that this province has the lowest percentage illiterate of all the provinces. Removing all handicaps, Alberta, Saskatchewan and British Columbia would apparently have smaller percentages illiterate than Ontario.*

*If we take the actual urban British female at ages 10-14 in the different provinces the results compare as follows:—
Prince Edward Island 0·36; Nova Scotia 0·30; New Brunswick 0·20; Quebec 0·31; Ontario 0·12; Manitoba 0·18; Saskatchewan 0·36; Alberta 0·15; and British Columbia 0·23.
The question may be asked as to why these figures were not used as indices of illiteracy freed from distribution handicaps instead of the figures actually used. The chief reason is that the numbers upon which some of the above percentages are based are far too small to be representative. Another reason is that the bases of comparison are not uniform in this case as they were in Statement XI. To take the above figures as figures corrected for all the conditions mentioned we would have to assume that all individuals of the British race, etc., behaved exactly in the same way, and, of course, they do not. There are urban and urban, and British and British. For the sake of comparison it is much more sound to take the idealized average behaviour for urban, etc. It is never safe to take actual conditions in any one year, especially when based upon small numbers, as norms.

CHAPTER II

COMPARISON OF ILLITERACY IN CANADA WITH THAT IN OTHER COUNTRIES

Introduction.—In a census monograph based on the data of 1921 and other sources, a comparison was drawn between illiteracy in Canada and other countries, derived in a large number of cases from direct replies to questionnaires sent to these countries. There it was shown that the methods used in measuring illiteracy by different countries varied so much that it was practically impossible to use tabular matter to make the comparison. The situation has not materially altered since the date of preparation of this book. A later publication* (in 1929) by James F. Abel and Norman J. Bond emphasises this fact still more and the findings of this publication are sufficiently recent and the changes which have since taken place are probably sufficiently unimportant to warrant making frequent use of their data here.

Areas of Least Illiteracy.—According to Abel and Bond, the areas of least illiteracy are in Western Europe and, for the most part, along the shores of the North and Baltic Seas. Denmark, Norway, Sweden and Switzerland claim to have little or no illiteracy. When we consider the methods of obtaining the data on the subject practised in these countries, it is clear that Germany and Great Britain can advance the same claim. In Canada, immigrants directly from these countries show a certain small percentage of illiterates and, while it is probable that their illiteracy cannot be regarded as representative of the illiteracy of the countries from which they came, the data have considerable value—probably more for purposes of comparison than data based upon the quotations from countries which do not collect data on illiteracy by means of the census.

In the Canadian Census of 1931, the illiteracy of persons 10 years of age and over was obtained by country of birth. These figures possess the great advantage of having the same age (lower) limit for all countries alike. They are probably as good as we can find anywhere for purposes of comparison. Their value as being representative of the present illiteracy of the various countries depends mainly upon the answer to the question as to whether the literacy status of the emigrant is the same as that of the remainder of the population of his country. There is no reason why the emigrant should not be as representative a sample as the army conscript or the person signing or not signing the marriage register. Obviously, to all three applies the objection that they do not represent all age classes of the population—the conscript and the groom being definitely exclusive of the younger and older ages and the emigrant excluding a large part of these ages. We have seen in Chapter I that, in Canada, the ages of least illiteracy are those between 10 and 20 and, as these ages represent large numbers of the population, their illiteracy affects the true illiteracy rates of the population to a very high degree. Further, their illiteracy represents the ideal toward which the country is at present tending.

Thus, the data in Table 5, Part II, are subject to serious objections as a basis of comparison of the illiteracy of the different countries of the world. Undoubtedly where the numbers represented are small they have very little value but, on the whole, objections equally, if not more, serious apply to the data on the subject collected by these countries themselves. They do not apply to the same ages and many of them apply only to certain non-representative portions of the population. The data apply to the population who emigrated, a large proportion of whom are adults and considerably more than half, males; further, the people from these countries who have been in Canada a long time have an older and, consequently, a more illiterate population, *ipso facto*, than those recently arrived. This applies especially to such countries as Germany. On the whole, the table does not give a very good representation of the illiteracy of the different countries but it has a distinct value in throwing some light upon what otherwise would be in complete darkness—illiteracy for the same age limits at the same date and obtained in exactly the same way.

**Illiteracy in the Several Countries of the World*, Bulletin 1929 No. 4, Bureau of Education, Washington.

If, then, care is taken not to forget that the figures apply to the illiteracy of the countries as they were represented in Canada in 1931 and are not an official definite statement of the actual illiteracy of these countries, it will be safe to arrange the percentages illiterate in order of magnitude for purposes of further analysis.

XII.—PERCENTAGES ILLITERATE OF THE POPULATION 10 YEARS OF AGE AND OVER, BY BIRTHPLACE, ARRANGED IN ASCENDING ORDER OF MAGNITUDE, CANADA, 1931

Birthplace	P.C. Illiterate	Birthplace	P.C. Illiterate	Birthplace	P.C. Illiterate
1. South Africa[1]	0·14	17. Iceland	2·40	33. Hungary	10·33
2. Wales	0·23	18. South America[1]	2·44	34. Bulgaria[1]	10·87
3. Scotland	0·29	19. France	2·90	35. Yugoslavia	10·87
4. England	0·39	20. Canada[3]	2·98	36. Russia	10·90
5. Australia[1]	0·65	21. Other British[1]	3·29	37. Lithuaaia	11·92
6. New Zealand[1]	0·67	22. Germaay	4·02	38. Turkey[2]	12·76
7. Ireland	0·78	23. Belgium	4·42	39. Japan	14·80
8. Lesser Isles	0·79	24. Newfoundland	4·71	40. Italy	14·87
9. British West Indies[1]	1·06	25. Spaia[2]	5·01	41. Poland	16·88
10. United Statcs	1·31	26. Other Europe[1]	5·22	42. Chiaa	18·03
11. Denmark	1·55	27. Other Countries[1]	6·51	43. Austria	18·41
12. Switzerland	1·78	28. India[1]	7·95	44. Roumania	18·48
13. Sweden	1·80	29. Finland	8·23	45. Syria[1]	19·92
14. Norway	1·94	30. Greece	9·75	46. Armeaia[2]	21·28
15. Holland	1·99	31. Other Asia[2]	10·01	47. Ukraine	21·37
16. At sea[2]	2·07	32. Czechoslovakia	10·14		

[1]Reprcsented in Canada hy less than 5,000 people over 10 years of age—a numher too small for percentagcs illiterate to be comparahle with other countries.
[2]Represented in Canada by less than 1,000 people ovcr 10 years of age.
[3]Exclusive of Yukon and Northwest Territories and aborigines in the provinces.

From this list should obviously he omitted the birthplaces represented by less than 1,000 persons, since, if such a country had as low a percentage illiteracy as that shown for South Africa, no illiterate person would appear. This rule would exclude Spain, Armenia, Turkey, Other Asia, and "at sca". Any further exclusion would have to be purely arhitrary, hut possibly 5,000 should he taken as the lowest admissihle representation. This would further exclude Australia, New Zealand, India, South Africa, British Wcst Indies, South America, "other" British Countries, Bulgaria, "other" Europe, Syria and "other" countries. These exclusions are indicated on the list hy footnote numhers. They leave thirty-one countries which can be compared.

Another point which applies to data on the total population of a country as well as to a sample like the ahove should be obvious. The countries with a large geographical arca or with a large variety of races, such as Canada, United States, Russia, etc., are not as adequately represented hy a single percentage or index as the smaller countries with a single or a few closely related races. Consequently, their place in the above order is hardly fair. Prohahly hy giving wide group intervals to the above list a fairly good basis of comparison will he furnished.

Less than 1 p.c. —The British Isles, South Africa, Australia, New Zealand and Lesser Isles.
Bctween 1 and 2 p.c.—United States, the Scandinavian Countries (except Iceland), Holland, Switzerland.
Between 2 and 3 p.c.—Canada*, Iceland, France and South America.
Between 4 and 5 p.c.—Germany, Belgium and Newfoundland.
Between 8 and 10 p.c.—Finland and Greece.
Between 10 and 12 p.c.—Czechoslovakia, Hungary, Yugoslavia, Russia and Lithuania.
Over 12 p.c. —All other countries.

That the above list compares closely in places and not so closely in others with the findings of Ahel and Bond may be seen from the following quotation: "The area of least illiteracy in the world is in Western Europe . . . Though the indices on which those claims are hased are unreliahle,

*Exclusive of Yukoa aad Northwest Territories and aborigiaes ia the proviaces.

the claims are not far from correct . . . Closely bordering on this section of little or no illiteracy are Belgium, Czechoslovakia, England and Wales, Finland, France, the Irish Free State, the Netherlands, North Ireland and Scotland." There is little doubt, however, that with more reliable indices the United Kingdom would be found to have as low percentages as the Scandinavian Countries and lower than other countries, remembering, of course, that large countries like United States and Canada cannot be adequately compared with other countries because of their wide areas and heterogeneous populations. Really the most remarkable achievement in the reduction of illiteracy can he attributed to these two countries, for Australia, though large, has a comparatively homogeneous population.

One of the chief values of the table given for illiteracy in Canada by birthplace is the extent to which it shows what countries are apparently sending to Canada the more illiterate portion of their population and what the less illiterate portion. If we rely upon the claims to no illiteracy in Germany and some other countries, it is clear that Germany, the Scandinavian Countries, Holland, Switzerland, Czechoslovakia and Austria are sending their more illiterate population, (this, of course, is partially explained by age and date of emigration), the United States, India, South America, France, Spain and "other" Europe, their less illiterate, while the British countries are sending a fairly representative sample. As to other countries, the percentages illiterate are so large in any case that it does not make much difference one way or the other. Meanwhile, the following fact is important. The countries Denmark, Iceland, Norway, Sweden, Switzerland and Germany claim to have little or no illiteracy but 130,850 persons over 10 years of age born in these countries are living in Canada among whom are found 3,219 or 2·46 p.c. unable to read. This is almost as high a percentage as obtains among the Canadian born of all races except aborigines; further, Canada has a vast area with many outlying parts recently settled. At the same time, there were living in Canada 1,113,912 persons 10 years of age and over from the British Isles among whom were found 4,470 or 0·4 p.c. unable to read. This is a very high representation from the British Isles, much higher than the signatures to the marriage register or to army enlistments of any one year and more representative of the different ages, a fact which was seen in Chapter I to be very important. However, the ages of persons from the British Isles in Canada were not so favourable to literacy as those of the population remaining in the British Isles. The moral of all this would seem to be that the data on illiteracy, in the countries where no census is taken of this attribute, are unreliable and, consequently, that no purpose is served by an exhaustive analysis of what data exist. However, a brief review, based partly on the monograph of Abel and Bond is probably useful. Following this review will he given in non-tabular form the latest available quotations of illiteracy in different countries.

Political Divisions with Population over Half Illiterate.—"The immediately striking feature of this group of eighteen countries is the immense population under consideration, approximately 618,000,000, as compared with forty-five countries having rates under 50 p.c. and their population of some 468,000,000. With the exception of the Union of Soviet Socialist Republics, they are in or near the Torrid Zone. Their peoples are largely indigenous, or in the American divisions, mixed Southern European and indigenous." Without subdividing these countries into classes according to rates of illiteracy, the list of countries with more than 50 p.c. illiterate is as follows:

America—Colombia, British Guiana, Mexico, Porto Rico, Brazil, Nicaragua, Venezuela, Dominican Republic, Guatemala; also in the main, Aborigines in Canada and United States.

Europe—Union of Soviet Socialist Republics, Portugal.

Asia—Ceylon, India, British Malaya and, of course, several parts for which data are not available.

Africa—Egypt, non-Europeans of Union of South Africa and the great part of the continent on which no data are available.

Australasia—Philippine Islands, Dutch East Indies.

Even this very broad statement is not wholly accurate, based as it is upon geographical areas, not peoples. In Chapter I it was seen that it is next to impossible to depict satisfactorily the geographical distribution of illiteracy, owing to the other forms of segregation of illiteracy within these areas—especially age and race. The above list with the following list, however, furnishes a useful scale with which to compare the illiteracy of groups in Canada.

XIII.—COMPARISON OF PERCENTAGES ILLITERATE OF VARIOUS AGE GROUPS IN CANADIAN POPULATION, 1931, WITH THE ILLITERACY OF DIFFERENT COUNTRIES

Age Group	P.C. Illiterate (Cannda)	Countries Whose Peoples as a Whole Hnve a Smaller Percentage Illiternte than the Canadian Age Group
10–14	1·1	United Kingdom and North Western Europe, Latvia; Japan except Cho Sea province, non-aborigiaal population (10 years nnd over) of Australia, New Zealnnd nnd South Afriea; Northern Ireland.
15–19	1·6	
20–24	2·3	
25–29	3·0	Canada (Canadian born 10 years nnd over, exclusive of nborigines).
30–34	3·3	
35–39	3·7	Esthonia (10 years and over), U.S. Samoa, United Statcs (10 years snd over), Canada (10 years and over) exclusivc of Indians.
40–44	4·1	Canada, all classes (10 years and over).
45–49	4·6	
50–54	5·3	
55–59	6·5	France (10 years and over), Czechoslovakia.
60–64	7·4	Hungary, prohahly New Guinea.
65–69	9·0	Irish Free State.
70–74	11·0	
75–79	12·5	Uruguny.
80–84	13·8	
85–89	15·5	
90–94	19·1	Hawaii.
95–99	27·7	The Argeatine Republic, Alaska, Newfoundland nnd Labrador (10 years and over), Virgin Islands (U.S.A.), probnbly Poland.
100 nnd over	49·1	The aborigines of Canada (10 years and over), Greece (10 yoars nnd over), Lithuania.
	Above any Canadian group	The countries mentioned enrlier with more than 50 p.c. illiterate.

Another comparison by the same method is more accuratc in many respects than the foregoing. It compares the illiteracy at different age groups of thc people of Canada with thc illiteracy of persons 10 years of age and over from different countries living in Canada in 1931. The data have the advantage of uniformity and definiteness.

XIV.—COMPARISON OF PERCENTAGES ILLITERATE OF VARIOUS AGE GROUPS IN CANADIAN POPULATION WITH PERCENTAGES ILLITERATE OF PERSONS FROM VARIOUS COUNTRIES LIVING IN CANADA, 1931

Age Group	P.C. Illiterate (Canada)	Countries from Whieh There are, Living in Canada in 1931, Persons 10 Years of Age nnd over Whose Illiteracy is Less than That of the Specified Canadinn Age Group but Greater than That of the Next Younger Group
	Less than 1·0	South Africa, United Kingdom, Australia, New Zealand, Ireland, Lesser Isles.
10–14	1·1	British West Iadies.
15–19	1·6	United States, Denmark.
20–24	2·3	Switzerland, Swedea, Norway, Hollaad, At sea.
25–29	3·0	Iceland, South America, Canada (Canadian horn, exclusive of aborigines), France.
30–34	3·3	"Other" British Possessions.
35–39	3·7	
40–44	4·1	Germaay.
45–49	4·6	Belgium.
50–54	5·3	Newfoundland, Spain, "Other" Europe.
55–59	6·5	
60–64	7·4	"Other" countries.
65–69	9·0	India, Finland.
70–74	11·0	Greece, "Other" Asia, Czechoslovakia, Hungary, Bulgaria, Yugoslavia, Russia.
75–79	12·5	Lithuania.
80–84	13·8	Turkey.
85–89	15·5	Japaa, Italy.
90–94	19·1	Poland, Chiaa, Austria, Roumania.
95–99	27·7	Syrin, Armeaia, Ukraine.
100 and over	49·1	

It will be noted that thc aborigines of Canada, although they have a high percentage illiterate when compared with the rest of the population, have a low percentage as compared with the vast majority of the world's people. About a third of our aboriginal population 10 years of age and over are illiterate and this is rather a respectable position when taken on a world scale.

With the *proviso* that any assembling of material on world illiteracy is imperfect, thc following summary is given of material collected from different sources.

NON-TABULAR SUMMARY OF LATEST AVAILABLE DATA ON ILLITERACY IN DIFFERENT COUNTRIES

England and Wales.—In 1929, the number signing the marriage register by mark was 774 men and 776 women while in 1924 the numbers were 995 men and 1,041 women.

Scotland.—In 1933, out of 34,201 marriages, 34 males and 42 females signed the marriage register by mark.

Northern Ireland.—Census of 1931—1·9 p.c. males and 1·2 p.c. females signed the marriage register by mark.

Irish Free State.—This information was not tabulated in the Census of 1926.—In 1911, 2·8 p.c. of the population 9 years of age and over could read only, while 10·1 p.c. were illiterate.

The Argentine Republic.—The only information available is derived from the Census of Education, 1931.—Of the children between the ages of 5 and 13, 635,862 or 29·37 p.c. were illiterate.

Australia.—In 1921, 0·17 p.c. of the total getting married that year signed the register by mark, 1,491 persons per 10,000 all ages, exclusive of aborigines, could not read and 28 persons per 10,000 could read only.

Austria.—The question was not included in the Census of 1920 and for only one province in 1923.

Belgium.—The Year Book of 1933 states that, of the 45,142 males who entered into active service, 891 or 1·97 p.c. were illiterate and, of the 40,557 sent into the Congo, 168 or 0·41 p.c. were illiterate. The results of the Census of 1920, taken from Driemaandblad, show illiteracy by certain age groups.

Age Group	Illiterate	
	No.	p.c.
8-14	75,602	8·5
15-54	230,316	5·2
55 and over	205,002	18·9

Ceylon.—The Census of 1921 gives the percentages of illiteracy for the population 5 years of age and over as follows:—

Total	60·1 p.c.
Male	43·7 p.c.
Female	78·8 p.c.

(Taken from the Year Book of 1926.)

Czechoslovakia.—Census of 1928:—

	Population 5 years and over	Illiterate	
		No.	p.c.
Total	12,378,321	915,201	7·39
Male	5,934,075	391,310	6·59
Female	6,444,246	523,891	8·13

Denmark.—Practically no illiteracy.—Compulsory education has been in force since 1814. For the population 10 years of age and over the rate of illiteracy is much less than 1 p.c.

Egypt.—Census of 1927:—

	Population 10 years and over	Illiterate	
		No.	p.c.
Total	10,287,778	8,816,601	85·70
Male	5,126,179	3,894,114	75·96
Female	5,161,599	4,922,487	95·37

(Population is largely Egyptian.)

Illiteracy of foreigners in Egypt:—

	Foreigners	Illiterate	
	10 years and over	No.	p.c.
Total	188,832	31,748	16·81
Male	93,580	8,906	9·52
Female	95,252	22,842	23·98

Esthonia.—Census of 1922—Considering the population 10 years of age and over, the illiteracy in 10 Esthonian provinces was 3·4 p.c. If the province of Petseri (Russian province) is included, it was 5·6 p.c. There is practically no illiteracy amongst the younger people. The rates for the majority of the provinces vary from 1·5 to 3·0 p.c. (Year Book of 1929.)

France.—Census of 1926:—

	Population	Illiterate	
	5 years and over	No.	p.c.
Total	36,574,547	2,573,253	7·04
Male	17,467,870	1,111,581	6·36
Female	19,106,677	1,461,672	7·65
	10 years and over	No.	p.c.
Total	34,294,850	2,026,222	5·91
Male	16,314,353	830,190	5·09
Female	17,980,497	1,196,032	6·65

Out of the 226,620 conscripts in 1930, 10,461 or 4·62 p.c. could neither read nor write, and of the 338,804 marriages in 1928, 2,365 or 1·40 p.c. of the men and 3,283 or 1·94 p.c. of the women signed the register by mark.

Germany.—There is no new data available. The number of illiterates is practically negligible. For the population of 10 years and over it is less than 1 p.c.

Greece.—Census of 1928:—

	Population	Illiterate	
	10 years and over	No.	p.c.
Total	4,672,028	1,953,875	41·82
Male	2,304,942	549,033	23·82
Female	2,367,086	1,404,842	59·35

Holland.—The 1931 reports for the militia show that of the 20,560 conscripts, 20,529 or 99·85 p.c. could read and write, 0·03 could read only and 25 or 0·12 p.c. were illiterate. There is no report on illiteracy now published by the Statistical Bureau as it is practically negligible.

Hungary.—Census of 1930:—

		Illiterate	
	Total population	No.	p.c.
Total	8,688,319	1,801,570	20·70
Urban	2,811,251	*	15·10
	Population	Illiterate	
	6 years and over	No.	p.c.
Total	7,621,825	*	9·60
Urban	*	*	6·50

India.—Census of 1931—Of the population 5 years of age and over only 156 males per 1,000 and 29 females were able to read and write.

Italy.—Census of 1931—21 p.c. of the population over 6 years of age were illiterate and 11·1 p.c. of the 1930 conscripts and 8·8 p.c. of those signing the marriage register, made their mark

*Figures not available.

Japan.—There are no census figures available. Of the conscripts called, there were:—
in 1929—3,044 out of 585,819 or 0·52 p.c. illiterate;
in 1930—2,873 out of 595,505 or 0·48 p.c. illiterate;
in 1931—3,090 out of 619,146 or 0·50 p.c. illiterate.
(This does not include Cho Sen province, which is much more illiterate.)

Latvia.—Census of 1930:—

	Population 10 years and over	Cannot read No.	Cannot read p.c.	Cannot write No.	Cannot write p.c.
Total	1,573,551	7,506	0·48	7,559	0·48
Male	720,709	4,409	0·61	4,416	0·61
Female	852,842	3,097	0·36	3,143	0·37

Lithuania.—From the Census of 1923 for Gr.-Lithuania and the Census of 1925 for Klaipeda:—

	Population 10 years and over	Illiterate No.	Illiterate p.c.
Total	1,760,956	537,036	30·5
Male	829,188	238,066	28·7
Female	931,768	298,970	32·1

Mexico.—Census of 1921—14,243,852 or 43 p.c. of the inhabitants 12 years of age and over were illiterate. This report is for eight states only; the rates of illiteracy would probably be much higher for the others.

New Zealand.—Census of 1916 figures latest obtainable.—There is a good school system and compulsory education has been in force for many years and there is practically no illiteracy.

Poland.—In the Census of 1921, out of a population of 20,099,584 10 years of age and over, 6,581,307 or 32·74 p.c. were illiterate.

Russia.—Census of 1926:—
Cities—758 out of every 1,000 males were literate;
626 out of every 1,000 females were literate.
Villages—524 out of every 1,000 males were literate;
274 out of every 1,000 females were literate.
For the whole Soviet Union, 567 out of every 1,000 were literate.

South Africa.—Census of Europeans, 1918 the latest available.

	Population 10 years and over	Illiterate No.	Illiterate p.c.
Total	1,043,864	12,907	1·24
Male	536,329	7,499	1·40
Female	507,535	5,408	1·07

In regard to non-Europeans the majority of Bantu race are illiterate.

Sweden.—Illiteracy amongst the Swedish recruits 1925-26 was 19 or 0·05 p.c. who could not read and 51 or 0·13 p.c. who could not write.

Turkey.—Census of 1927:—
Illiterate:—
87·01 p.c. of males, all ages.
96·33 p.c. of females, all ages.
91·84 p.c. of total, all ages.

Venezuela.—Census of 1925:—

	Population 5 years and over	Illiterate No.	Illiterate p.c.
Total	2,507,493	1,365,505	54·46
Male	1,222,332	654,671	53·56
Female	1,285,161	710,834	55·31

(Exclusive of Indians.)

CHAPTER III

IMPROVEMENT IN THE ILLITERACY STATUS OF CANADA WITH THE PASSING YEARS

Introduction.—As was seen in Chapter I, improvement in illiteracy is not a single process that can be attributed directly to any one agency. Even in the older countries with homogeneous populations, the improvement in illiteracy in an interval of ten or twenty years is only accounted for in small part by the activity of the schools in that interval, although, of course, it is attributable to the efforts of the educational system of that country over a long period, say, a life-time. In Canada and other countries with immigrant population, improvement in illiteracy is not due wholly to the schools over any period, however long. Even if the Canadian schools eliminated illiteracy over a life-time, in the case of those attending them and of age to attend them, this achievement could easily be offset by an inrush of illiterate immigrants. The task of such countries as Canada and the United States in battling illiterates has been exceptionally heavy.

The foregoing remarks imply that there is no elimination of illiteracy by the direct means of teaching the illiterates to read after school age. While this assumption is not valid on *a priori* grounds, it is virtually sound. A few adults may be taught to read but their number in Canada must be negligible. This is clearly brought out by Table 10, Part II, which shows that the actual illiteracy of 1931 at each age group was no less than might be expected from that shown by persons 10 years younger in 1921. Certainly, the few adults that are taught to read are offset by those who lapse from a state of literacy or near illiteracy to that of total illiteracy.

Agencies at Work in Eliminating Illiteracy.—The two main agencies for the elimination of illiteracy are the schools and time. The schools eliminate by the direct means of teaching the illiterate to read; time acts in killing off the illiterates. It has been seen that the older the person the more apt he is to be illiterate. This, of course, is easily understandable since the present educational opportunities are greater than those of the past. While it is generally true in Canada it is not consistently true, for some young adult ages show more illiteracy than older ages, or at any rate do not indicate consistent progress. This is explained by immigration and probably to a considerable extent by emigration. It is easy to see how immigration works; in the case of emigration it is less obvious. Suppose the country had no immigrants but considerable emigration. Now emigration as well as immigration takes place largely at early adult ages, say, 18 to 30. These ages are much less illiterate than older ages. These persons have just been educated and, if they remained in the country to pass on to the older ages, in course of time they would infiltrate these older ages with literacy. As it is, they leave, with the result that, as time goes on, the older ages, receiving a diminished number of literate persons, are retarded in their progress towards literacy. Now immigration steps in with illiterate persons (where it is not British, United States or North Western Europe) at the same ages as those who have emigrated. This should explain, then, the processes by which both immigration and emigration can work against progress in the elimination of illiteracy.

The improvement brought about by the schools can be illustrated in two ways. First, the improvement between 1921 and 1931 can be shown for each age group as follows, the ages for both years being grouped as they were shown in 1921, and the data referring to all classes of the population.

XV.—PERCENTAGES ILLITERATE OF THE POPULATION 10 YEARS OF AGE AND OVER AND PERCENTAGE IMPROVEMENT IN THE DECADE, BY BROAD AGE GROUPS, CANADA, 1931-1921

Age Group	P.C. Illiterate		Improvement in Decade	P.C. Improvement over 1921 Illiteracy
	1931	1921		
10–14	1·12	2·01	0·89	44·3
15–20	1·64	2·80	1·16	41·4
21–34	2·87	3·93	1·06	27·0
35–64	4·88	6·50	1·62	24·9
65 and over	10·96	13·15	2·19	16·7
Not stated	14·27	24·32	10·05	41·3

Now it should be clear that the activities of the schools to be credited with the improvements shown above were not the activities of the period 1921-31. The immediate activities of the school are seen only in the first group, *viz.*, 10-14. The decrease in illiteracy from 2·01 p.c. to 1·12 p.c. represents the improvement in the influence of the schools operating in the four years prior to 1931 over those operating in the four years prior to 1921. In the 15-20 group there is an improvement from 2·80 p.c. to 1·64 p.c. but this is an improvement over those who were 15-20 in 1921 on the part of those who were below 15 in 1921. In other words, it was an improvement of the schools operating four years prior to 1921 over those operating from five to eleven years prior to 1921 and so on. Since the groups are too broad and uneven for measuring regular periods of time and, in any case, since the comparison of the years 1921 and 1931 does not really show what it seems to show, *viz.*, improvement effected by the schools of the period, it is much better to take the illiteracy of each quinquennial age group of 1931 by itself as follows:—

XVI.—PERCENTAGES ILLITERATE OF THE POPULATION 10 YEARS OF AGE AND OVER, BY QUINQUENNIAL AGE GROUPS, AND PERCENTAGE IMPROVEMENT OF EACH GROUP OVER THE IMMEDIATELY OLDER GROUP, WITH PERCENTAGE IMMIGRANT IN EACH GROUP, CANADA, 1931

Age Group	Percentage Illiterate	Improvement over Immediately Older Age Group		Dates at Which Each Group Was 10-14	Percentage Immigrant in Group[1]
		Absolute	Percentage		
10-14	1·12	0·45	28·7	1927-31	1·2
15-19	1·57	0·70	30·8	1922-26	1·9
20-24	2·27	0·73	24·3	1917-21	5·7
25-29	3·00	0·29	8·8	1912-16	10·3
30-34	3·29	0·38	10·4	1907-11	12·0
35-39	3·67	0·38	9·4	1902-06	12·3
40-44	4·05	0·51	11·2	1897-1901	11·4
45-49	4·56	0·69	13·1	1892-96	10·2
50-54	5·25	1·28	19·6	1887-91	8·3
55-59	6·53	0·86	11·6	1882-86	7·2
60-64	7·39	1·65	18·3	1877-81	5·9
65-69	9·04	1·99	18·0	1872-76	5·2
70-74	11·03	1·48	11·8	1867-71	4·4
75-79	12·51	1·25	9·1	1862-66	3·5
80-84	13·76	3·13	18·5	1857-61	2·8
85 and over	16·89	-	-	Before 1857	2·9

[1]Other than British, United States and North Western Europe.

In the first place we notice that the first three age groups show a marked improvement, *viz.*, from 24 to 31 p.c. reduction of illiteracy every five-year interval since, say, 1917. These marked improvements can be definitely credited to the Canadian schools and to improvements in these schools by way of better attendance, for even the immigrants shown in these groups were manifestly of age to attend school in Canada. The next six groups show decidedly less improvement but the last column clearly indicates why. Immigrants with high percentages illiterate came in heavily at these ages. It is clear, then, that the slow improvement at the dates shown in the fourth column was not attributable to slow progress in school development in Canada. However, the exceptionally slight progress in the case of the 1902-06 and 1887-91 groups may be significant in this respect. At both of these periods, particularly 1902-06, new portions of Canada were being opened up. At times of new settlements the organization of schools can not keep pace with the settlement. Again, the position of 1862-66 may be due to a period of rapid settlement which is known to have taken place about that time. The combined influence of rapid settlement and arrival of immigrants of the more illiterate class, but neither one alone, can safely be assumed to be strongly causal in the want of improvement in the 1902-06 group.

It is clear that the progress from year to year due to the schools of Canada is much better shown by the case of the Canadian born, but the only age groups tabulated for these were the following three:—

Age Group	Illiterate	
	Canadian Born	All Classes
	p.c.	p.c.
10-20	1·33	1·33
21-64	3·79	3·99
65 and over	11·55	10·94

Clearly, nothing can be made from these age groups except that the Canadian born in the first group have made an average five-yearly progress of about 0·44 p.c. since the mid-point of the second group and that the second group made an average five-yearly progress of about 0·97 p.c. since the mid-point of the third group.

One thing is clear, *viz.*, that progress, *i.e.*, progress directly due to the schools, in removing illiteracy has been particularly marked during the last fifteen years. That this is not reflected in that of the population at all ages is clearly attributable to something that has nothing to do with the schools of these years.

Improvement among the Different Sections of the Population.—It will have become clear by this time that the simplest and best means of showing improvement in literacy is by means of the comparative illiteracy of the different age groups. Taking now the different sections of the population such as sex, rural and urban and provinces, and using exactly the same method of measuring improvement as in Statement XVI, we have the following:—

XVII.—PERCENTAGE IMPROVEMENT IN ILLITERACY OVER IMMEDIATELY OLDER AGE GROUP, BY QUINQUENNIAL AGE GROUPS, SEX, RURAL AND URBAN, CANADA, 1931

Age Group	Mid-Date at Which Group Was 10-14	Improvement over Immediately Older Age Group			
		Rural		Urban	
		Males	Females	Males	Females
		p.c.	p.c.	p.c.	p.c.
10-14	1928	35·9	16·8	45·1	47·6
15-19	1923	25·8	38·7	43·2	45·2
20-24	1918	16·1	26·5	43·4	26·3
25-29	1913	11·6	5·1	12·6	4·9
30-34	1908	7·9	12·8	8·0	16·8
35-39	1903	8·2	7·7	10·1	12·1
40-44	1898	13·8	11·4	12·8	13·2
45-49	1893	11·4	13·0	9·8	6·9
50-54	1888	19·8	15·9	19·5	17·5
55-59	1883	11·1	13·0	8·3	12·5
60-64	1878	16·2	17·9	19·0	22·3
65-69	1873	15·9	17·1	23·4	18·0
70-74	1868	11·4	6·4	14·8	15·7
75-79	1863	6·3	12·0	7·8	11·6
80-84	1858	10·9	10·5	10·9	8·2
85-89	1853	15·1	25·1	11·6	17·1
90-94	1848	19·5	28·2	29·1	41·5
95-99	1843	45·7	38·3	46·1	37·6
100 and over	1838 and earlier.				

In comparing the progress by rural and urban it should be made clear at the outset that these figures do not refer to the rates of progress by rural and urban as such but of the persons who were in rural or urban residence in 1931. These urban residents in 1931 may have been in rural residence when at school age. The comparison is really a population class comparison, not a rural and urban comparison at all. Consequently, it is very difficult to explain some of the peculiarities in the rates of progress because their causes are so complex, *e.g.*, the low rate of both male and female urban of persons who were of school age around 1893. This may have several causes, one of which may be the coming into existence of urban corporations in illiterate parts of the country around that year. This is similar to saying that persons passed from rural to urban residence, except that in the illustration given they move in at all ages whereas in an ordinary trek they move in only at certain ages, particularly those between 18 and 30. A period of rapid urban increase is generally due to a movement into urban residence from rural parts or abroad and this could easily increase urban illiteracy. Similarly, a period of very slow urban decrease would result in a great improvement in urban literacy. In view of this it will be interesting to examine the periods of slow progress in urban male illiteracy synchronizing with fairly rapid progress in rural male illiteracy especially around 1888, 1883 and 1868; strangely enough the opposite held true of the 1868 females. However, it would be a fruitless task to assign causes to the irregularities in the rate of progress, but an examination of the general trends is well worth while. The urban progress has been greater than the rural progress and the female slightly greater than the male. The period of greatest progress has evidently been the last fifteen years or since about 1918; of the slowest progress, the preceding fifteen years or, say, from the beginning of the century till about 1918. This reasonably coincides with rapid settlement and generally would apply to urban as well as rural, for not only were the urban centres receiving immigrants in those days, but Canadian born who

were of school age under pioneering conditions have since moved into urban centres. To this general observation may be added that both rural and urban females who were of school age in 1913 and the rural females of 1868 showed strikingly slow progress, the same being true of the males who were of school age in 1908, 1903, 1893, 1868 and 1863, while 1868 was low for all classes alike. The significance of these last dates is difficult to interpret definitely. One can only surmise. There is great significance in the fact that the rate of progress in the last fifteen years has been greater than at any previous period because this is contrary to expectations. When a quantity like an illiteracy percentage is being worn down by time, it is customary to find large portions taken off at the beginning, these portions becoming smaller and smaller as time goes on and as the quantity becomes small with the result that it never completely disappears; in the case of illiteracy as shown in the above statement the wearing-down process has been stronger at the latter end than ever before. A process like this renders possible an ultimate almost complete elimination of illiteracy. More remarkable still, the later rates of diminution have been greatest in the urban population where the illiteracy percentage was already small. This behaviour is probably so rare a statistical phenomenon that it may be worth while investigating further.

Table 8, Part II, shows, arranged in intervals and ascending order of size, illiteracy percentages taken from the different age groups, male and female, rural and urban, in the nine provinces—500 different percentages. Opposite each interval of percentages illiterate are the percentages of improvement in a five-year period. As before, the period elapsing between one age group and the next younger is taken as representing a five-year difference in the dates at which these persons were of school age. This, of course, is absolutely correct, except that it must be remembered that the persons who were of school age at these different dates were not necessarily attending school or attending school in Canada.

It is clear from even the appearance of the table that there is no connection between the stage of illiteracy reached and the improvement in the next five years. Consequently it is clear that the accelerating diminution of illiteracy mentioned above refers only to the last fifteen years before 1931, or since 1916, which may, so far as Canada is concerned, be considered a period of exceptional educational activity. The testimony of the figures is borne out by the educational history of the period. In the first place the period of very rapid settlement was over and the newest provinces and the new parts of older provinces had had time to build schools. In the next place compulsory school attendance laws were enacted and put into force by means of school attendance officers, etc. Those provinces that still have no compulsory attendance acts were caught by the spirit of the times and spurred up school attendance by moral rather than legal persuasion. The spirit of the times was very articulate in teachers' associations, in the press and elsewhere.

Although we now see that illiteracy is not really diminishing with accelerating speed, it is still remarkable that its diminution has not shown a slowing up. This is contrary to expectations. Why should an urban population which has now a low percentage illiterate show as much progress in the next few years as a place which has a high percentage, when it should be much easier to wear down a high percentage than a low? The explanation would seem to involve not only the question of immigration and emigration but also a point which was dealt with in Chapter I, *viz.*, segregation, *i.e.*, the tendency for illiterates to drift into an illiterate rather than a literate community or age group. The immigrants come in in certain age groups; the more illiterate of them settle where there are other illiterates and so on. No doubt occupation type is partly responsible for this. The ultimate effect of it may be that the ages from which at present illiteracy is being rapidly eliminated will have a tendency to pick up some illiterates from outside as they advance but this is less likely to happen where the elimination is practically complete than where it has proceeded more slowly.

Since illiteracy is thus decreasing with age, down to age 10-14, at an undiminishing rate and since the ages manifestly mark off the dates at which each group was of school age, it follows the population at all ages will show a decrease in illiteracy proportional to the extent to which the persons, now in the older ages, are removed by death and replaced by the younger ages. This, of course, provided that no foreign elements with higher percentages of illiteracy are injected. Merely as a matter of interest, the present population 10 years of age and over is shown as it will appear, say, ten years from 1931 by showing the survivors at each age group by means of a life table and assuming (what will presently be shown to be highly probable) that each age retains its present percentage illiterate for the next ten years.

XVIII.—POPULATION WITH PROBABLE SURVIVORS AND PROBABLE NUMBER AND PERCENTAGE ILLITERATE IN 1941, BY QUINQUENNIAL AGE GROUPS, CANADA, 1931

Age Group	Population, 1931	Probable Survivors, 1941	Probable Illiterates, 1941	
			No.	P.C.
10-14	1,074,051	1,042,182	11,672	1·12
15-19	1,039,591	1,112,380	12,458	1·12
20-24	911,185	1,048,274	11,781	1·12
25-29	786,281	1,008,403	15,832	1·57
30-34	708,836	883,800	20,062	2·27
35-39	688,463	757,975	22,740	3·00
40-44	646,099	679,065	22,341	3·29
45-49	585,211	652,145	23,934	3·67
50-54	488,681	600,972	24,339	4·05
55-59	367,025	528,446	24,097	4·56
60-64	294,597	420,206	22,061	5·25
65-69	231,134	289,950	18,934	6·53
70-74	171,600	206,218	15,240	7·39
75-79	98,629	134,982	12,202	9·04
80-84	49,171	73,788	8,139	11·03
85-89	19,129	24,655	3,082	12·50
90-94	4,932	5,990	824	13·76
95-99	1,073	1,148	177	15·42
100 and over	163	170	32	18·82
Total[1] 10 years and over	8,165,851	9,470,749	269,947	2·85

[1]Stated ages only.

This means that if the schools in the ten years between 1931 and 1941 continue to do as well as they did in the five years prior to 1931 and if there is no injection of an illiterate immigrant element in the interval, the number illiterate in Canada should decrease from 309,000 to 270,000 by 1941 and the percentage illiterate from 3·79 to 2·85, an improvement of 25 p.c. in ten years brought about solely by age displacement. This draws attention to the great importance of this age displacement as an agent in removing illiteracy, from which follows that no matter how well the schools do it is necessary to await this displacement before illiteracy is eliminated. It also follows that this elimination will be slower if the birth rate and death rate continue to go down.

Changes in Illiteracy between 1921 and 1931.—It should be clear now that a comparison between 1931 and 1921 does not represent the measure of the educational activities of the interval, but a combination of these, age displacement, the results of immigration and emigration and probably other factors. Thus it should be clear at the outset that the ages 20-24 in 1931 should not be compared with the same ages in 1921 but with the age group 10-14. With this in mind, Table 9 showing the illiteracy age for age in these two censuses should be interesting. The evidence of this table would lead to the conclusion that a retrograde progress was made in the interval. Thus the percentage illiterate at 20-24 in 1931 was 2·27 whereas that of the 10-14 in 1921 was 2·03; 25-29 was 3·00 in 1931 whereas 15-19 was 2·75 in 1921 and so on. If we relied solely on this evidence we would conclude that a certain amount of the progress made in the schools is lost in the next ten years, but this seeming retrogression could easily be due to the influx of an illiterate element in the interval.

Indications of Improvement or Retrogression after Passing School Age.—Now it is an important point to settle—whether, after school age is passed, there are indications of improvement or retrogression in illiteracy. An attempt was made to examine this point. The population of 1921 was scaled in quinquennial groups from five years upwards. The expected survivors of each age of this population in 1931 were then calculated from a life table. Of course the 1921 population at 5-9 would be 15-19 in 1931 and so on. The illiteracy of each age group in 1921 was assumed to be the illiteracy of their survivors ten years older in 1931. This would correspond with the actual illiteracy of each group in 1931 if there were no improvement or retrogression. The actual illiteracy in 1931 is shown in Table 10, Part II, against the expected illiteracy.

The first group, *i.e.*, those who were 5-9 in 1921, had a percentage illiteracy of 35·67 in 1921 and 1·57 in 1931. All, or nearly all, of this improvement was effected by the schools in the interval. It would seem from this that before the age of 10, the illiteracy of the population is reduced from total illiteracy to 35·67 p.c., *i.e.*, 64·33 p.c. of the population is made literate. In the next ten years this 35·67 is reduced to 1·57, *i.e.*, another 34·10 p.c. are rendered literate. The population is

now past school age. After this age there is no evidence of a further reduction of illiteracy; on the contrary there are as many indications of retrogression as of advancement. The result is that for all ages the actual percentage illiterate is almost exactly the same as the expected percentage, *viz.*, 4·64 as compared with 4·68. There are many points in the table which are difficult to understand. The actual illiteracy at the older ages, *i.e.*, over 50 years of age is worse than expected; between 30 and 49 it is better than expected and between 20 and 29 it is again worse than expected. It is true that there was a large element of new population between the ages of 20 and 29, the age at which outward and inward movement of the population is heaviest. The figures show an expected population at this age of 1,675,628 as compared with an actual of 1,698,252 but this does not tell the whole story. There are evidences of heavy emigration in the early part of the decade and this emigration would be largely from the 20-24 age group resulting in a heavy displacement in the population 25-29 by 1931. The figures of the census of years of arrival of the immigrant population are shown in Table 11, Part II.

From Table 11 we find that ages 20-29 contained over 238,000 of a new element whose illiteracy was not included in the illiteracy expected from the 1921 population. Incidentally the immigrant arrivals throughout the whole range of ages illustrate one of the reasons why the expected and actual illiteracy are different. As to the retrogressive condition of the Canadian population 50 years of age and over, there is no certain explanation, merely conjecture. It is possible, of course, that there was a lapse from literacy to illiteracy on the part of the same persons, but this is only surmise. There are also possibilities that the ages are not accurately stated, *e.g.*, that the person who gave the age of 40 in 1921 did not give the age of 50 in 1931. The effect of this, however, would be the opposite of what is shown in Table 10, for it is well-known that up to, say, the age of 40, there is a tendency to under-state the age and after the age of, say, 65, to over-state the age. Now if persons who gave any age between 30 and 34 in 1921 gave an age between 35 and 39 in 1931 instead of the correct age, this would tend to show this age group more illiterate than it actually was because it really contained older and hence more illiterate persons than it seemed to contain. But the table shows persons 35-39 as less illiterate than expected. On the other hand if persons 60-64 in 1921 showed 75-79 instead of 70-74 in 1931, this would tend to make the group 75-79 less illiterate than it actually was because it contained a younger or less illiterate group. The table, however, shows the age 75-79 as *more* illiterate than expected. Again, it is possible that the literate persons state their age accurately while the illiterate persons, being unfamiliar with numbers, state it inaccurately, but we have evidence that this is not probable. The tendency to round numbers instead of exact numbers is nearly as prevalent among the educated as the uneducated. This leaves us with the phenomenon of the person 30-49 being less and those over 50 being more illiterate than expected, further from explanation than ever. It is not likely immigration and it is not likely age mis-statement. The ideas of genuine self-improvement in the case of the persons 30-49 and a genuine lapse in that of those 50 and over are inacceptable. It may be a spurious improvement and lapse, *i.e.*, the persons 30-49 may have been boasting and the older persons self-depreciating. This is probable. That persons aged 20-29 are not similarly inclined to boast may be hidden by the fact that this age group contains so many new-comers who are genuinely illiterate.

Improvement in Illiteracy in the Different Provinces, 1921-1931.—The improvement in illiteracy in the ten years in the different provinces is shown in Table 12, by sex and such comparable age grouping as was available from the manner of tabulation of the material.

It will be seen that, generally speaking, a marked improvement pervaded all the age groups in all the provinces. There were strange lapses between 15 and 34 among the females of Prince Edward Island and at ages 20-34 and 65 and over among the males of New Brunswick. It is also remarkable that New Brunswick which showed the greatest illiteracy in 1921 showed next to the least degree of improvement. The improvement in the four western provinces is striking. The fact that it was greater among females than males is at least partly due to the higher percentages illiterate among females than males in 1921. The foreign females in these provinces are more rapidly finding the level of females throughout Canada. With the same degree of improvement in the next ten years, illiteracy in these provinces would be practically negligible by 1941. The same is true of the females of Quebec. Speculation like this may be useless but none the less interesting. If in the next twenty years the improvement continued to be as great as between 1921 and 1931 the percentage illiterate in each province would be as follows:—

XIX.—ESTIMATED ILLITERACY RATE, BY SEX, FOR THE PROVINCES OF CANADA, 1951, IF THE PERCENTAGE RATE OF IMPROVEMENT OF 1921-1931 CONTINUED TO OBTAIN

Province	Estimated Illiteracy Rate, 1951		Improvement in Illiteracy between 1921 and 1931	
	Males	Females	Males	Females
	p.c.	p.c.	p.c.	p.c.
Prince Edward Island	2·13	1·41	13·45	14·90
Nova Scotia	3·54	1·50	12·30	22·44
New Brunswick	7·77	3·11	5·30	15·76
Quebec	2·95	0·79	20·79	27·53
Ontario	0·97	0·93	24·30	20·09
Manitoba	Nil	Nil	37·50	36·76
Saskatchewan	0·98	Nil	26·80	33·62
Alberta	Nil	Nil	33·98	33·61
British Columbia	Nil	0·27	38·80	31·66

Of course it is not expected that the above will happen but it is interesting as showing the trend.

IMPROVEMENT IN 1921-1931 AMONG DIFFERENT CLASSES OF THE POPULATION

Rural and Urban, Male and Female.—It is, of course, important to know what classes of the population show the greatest improvement. In the first place we compare the rural and urban residents. This, again, is not so much a matter of comparing places as comparing classes of people, for there are considerable differences in the class composition of the rural and urban populations. Not only are greater difficulties experienced in providing school accommodation in rural than in urban, but more illiterate classes are apt to settle in rural districts from abroad or the literate are more apt to leave the rural for the urban. In the comparison shown below, all ages 10 and over are used instead of age groups. It will be clear by this time that the comparison by all ages instead of by individual groups is a complex of many things which could be better analysed by comparing group with group than 1921 with 1931. Table 13 is a summary of all these conditions and further conditions which have not yet been examined, *viz.*, the Canadian born, the British born and the foreign born.

The number of cases in which urban illiteracy increased between 1921 and 1931 is unexpectedly large. No doubt part of this is due to the movement of the rural population to urban residence in the period. It will be noticed, however, that, for Canada as a whole, rural and urban illiteracy in the case of both males and females showed decided decreases. The illiteracy of the whole population decreased from 5·10 in 1921 to 3·79 in 1931 or 1·31 points. It is interesting to see how much of this decrease was due to the change in the distribution of the population as between rural and urban and males and females. With the illiteracy of 1931 in each class and the proportion rural and urban, males and females of 1921, the general illiteracy of 1931 would have been 3·92 p.c., *i.e.*, illiteracy in the ten years decreased 5·10—3·92 or 1·18 p.c. by virtue of the decrease in illiteracy of each class. This leaves 0·13 p.c. or one-tenth of the total decrease as due to a more urban and more female population. This is unimportant and it is easily seen that by far the more important element in the improvement is the lowering of illiteracy within the rural and urban and male and female classes. This is seen particularly in the Prairie Provinces. The importance of age as a factor in the improvement in these classes is so obvious that it is not worth while measuring it.

Canadian, British and Foreign Born.—One of the most important aspects of the illiteracy situation, as discussed in Chapter I, was the potentiality of elimination through the agency of segregation. Already in the present chapter it has been seen how the segregation by ages has led to improvement not only in the decade but over many years. There is a further segregation by race, and especially by birthplace. The illiteracy imported from abroad was seen in Chapter I to be the greatest single element in the illiteracy of Canada. The principal method by which the race and birthplace segregation can be eliminated is by the displacement of the foreign born of illiterate peoples by Canadian born. Table 13, Part II, shows the extent to which this has been carried out in the decade.

If, for the sake of illustration, we take the males in all Canada, it is easily seen that if there were a larger proportion of Canadian and British in 1931 than in 1921, this would automatically reduce the illiteracy for all males. The comparative rural male populations 10 years of age and over were as follows:—

XX.—NUMBER AND PERCENTAGE OF THE RURAL MALE POPULATION 10 YEARS OF AGE AND OVER AND PERCENTAGES ILLITERATE, BY NATIVITY, CANADA, 1931 AND 1921

Nativity	Rural Male Population 10 Years and over					
	Population in Class		P.C. of Total		P.C. Illiterate	
	1931	1921	1931	1921	1931	1921
TOTAL	2,025,105	1,793,788	100·00	100·00	6·10	7·72
Canadian born	1,492,294	1,309,164	73·69	72·98	6·41	7·99
British born	215,264	205,456	10·63	11·46	0·72	1·00
Foreign born	317,547	279,168	15·68	15·56	8·29	11·44

If the distribution as between nativity classes had remained the same in 1931 as in 1921, each class having the illiteracy of 1931, the illiteracy of all classes would have been 6·05 p.c. instead of 6·10 p.c. Thus the proportions of the three classes were more unfavourable in 1931 than in 1921 and the improvement was entirely due to the improvement within the classes themselves.

Races.—As already mentioned, race is the predominant factor in Canadian illiteracy. Table 14, Part II, shows the illiteracy of persons 10 years of age and over by racial origin in 1931 and 1921. It is particularly illuminating because it also divides each race into British (Canadian and other British) and foreign born.

It is seen in this table that out of 272,796 illiterates (exclusive of Indians in the Yukon and Northwest Territories) only 38,731 or less than one-seventh were British races. If we take together the British, Scandinavians and Dutch, we have only 43,175 or less than 16 p.c. of the illiterates although they comprise over 58 p.c. of the population 10 years of age and over. In this table the nativity classes are only two, *viz.*, British (including Canadian) and foreign born. In the case of all races except the British themselves, the French and the Negroes, the illiteracy of the foreign born was greater than of the British born. In the case of almost every race there was decided improvement between 1921 and 1931, the exceptions being the foreign-born British races and Dutch, the unspecified European and Asiatic races and the unspecified of all races. There is no great significance in the lapses of the unspecified groups as it is not certain whether they included the same races in 1921 and 1931. This refers only to both sexes. In the case of males there were lapses also among the Czechs and Slovaks and the foreign-born Dutch and Norwegians and the foreign-born Negroes. The lapse among the unspecified Asiatic races was very great, but this may be due to change in classification. The females of the different races were much freer from lapses than the males. The improvement among the foreign-born females of European races was greater than among the males. It would be interesting to measure the improvement (or the contrary) to the general illiteracy due to changes in racial distribution, but it seems hardly worth while making this calculation, especially as this improvement is tangled up with sex, nativity and age distribution. What seems of importance is that the improvement was so general. Taking all races the difference between the British- and foreign-born (rates of) illiteracy decreased from 8·75 p.c. in 1921 to 6·05 p.c. in 1931; in the case of European races from 7·28 p.c. to 4·45 p.c.; in the case of the Asiatic races, from 24·79 p.c. to 13·58 p.c. This is another direction of improvement. The more illiterate foreigners are catching up to the less illiterate British, although they have as yet a long way to go. One is impressed by the numerous ways in which illiteracy is being reduced. However, the possibility must not be lost sight of that the greater fertility of non-British races may bring about a retrograde condition in the population as a whole before these races have caught up to the British in the matter of literacy. It is doubtful that the racial distribution was in this respect as favourable in 1931 as in 1921.

Population from Various Countries of Birth.—No tabulation of illiteracy by birthplace was made in 1921; consequently, in Table 15, Part II, to make a comparison between 1921 and 1931, the illiteracy of the foreign born of the *race* corresponding to each birthplace is shown as well as the illiteracy by the actual country of birth in 1931. This, of course, is not an exact means of comparison but it is interesting.

The table is somewhat of a miscellany since it takes in the illiteracy of the provinces of birth in 1931 with no corresponding figures for 1921. It is interesting to compare the illiteracy of the Canadian born living in the different provinces with that of the persons born in these provinces, some of whom live elsewhere in Canada as follows:—

XXI.—PERCENTAGES ILLITERATE OF THE CANADIAN-BORN POPULATION 10 YEARS OF AGE AND OVER LIVING IN THE PROVINCES COMPARED WITH THE SAME PERCENTAGES BORN IN THE PROVINCES, CANADA, 1931

Province	P.C. Illiterate of Canadian Born 10 Years and over	
	Living in Province	Born in Province
Prince Edward Island	2·62	2·46
Nova Scotia	4·13	3·78
New Brunswick	7·14	6·59
Quebec	4·88	5·05
Ontario	1·93	1·60
Manitoba	2·50	2·49
Saskatchewan	2·41	2·92
Alberta	2·73	3·54
British Columbia	3·87	6·19

East of Saskatchewan it is evident that those moving out of the provinces are much less illiterate than those remaining; west of Manitoba the contrary holds. Age distribution and industry have, no doubt, a great deal to do with this phenomenon. As for other countries of birth, the comparison between 1921 and 1931 is so indirect that it has general interest only. Still, most of the foreign born of the various races (certain races excepted) are from the corresponding country of birth. However, the improvement shown in the table may be largely due to the schools of Canada, since the figures include persons of school age.

Nativity of Parents and Illiteracy.—A short statement on this point is all that is warranted by the data in as much as the illiteracy of Canadian born of Canadian-born parents is raised unnaturally by including Indians.

Percentage illiterate 10 years and over in 1931 of the Canadian born with:—

Both parents Canadian born	4·51
Both parents British born	0·76
Both parents foreign born	1·58
Father Canadian, mother British	0·73
Father Canadian, mother foreign	1·56
Father British, mother Canadian	0·94
Father British, mother foreign	0·70
Father foreign, mother Canadian	1·95
Father foreign, mother British	0·79
Parentage not stated	17·83

It will be noticed that the British, pure or mixed, lower the illiteracy in every case while the Canadian raise it.

Improvement by Geographical Areas.—The smallest geographical areas for which illiteracy data were tabulated were the counties and individual cities and towns. For the counties we have illiteracy for all classes 10 years of age and over as shown in Table 16, Part II, with the exception of British Columbia, the area of whose census divisions was not comparable in 1921 and 1931. Statement XXII is a summary of the illiteracy of the counties for rural parts only. This summary arranges the 205 counties of 1921 and 209 of 1931 in illiteracy classes and shows the number of counties in each class in 1921 with the percentage illiterate and the percentage illiterate of the same counties in 1931. The number of counties in the same class in 1931 with the percentage illiterate in 1931 and 1921 is also shown. The summary shows not only the improvement in the decade but also how far segregation of illiteracy has proceeded.

XXII.—PERCENTAGES ILLITERATE OF THE RURAL POPULATION 10 YEARS OF AGE AND OVER, CANADA (EXCLUSIVE OF BRITISH COLUMBIA), BY COUNTIES OR CENSUS DIVISIONS, 1931 AND 1921

Intervals of Percentage Illiteracy	No. of Counties, 1931	Average Illiteracy, 1931	Average Illiteracy, Same Counties, 1921	No. of Counties, 1921	Average Illiteracy, 1921	Average Illiteracy, Same Counties, 1931
		p.c.	p.c.		p.c.	p.c.
Less than 1 p.c.	7	0·79	0·92	7	0·85	0·86
1 and less than 2	32	1·46	1·64	25	1·47	1·37
2 " " " 3	30	2·52	3·43	27	2·44	2·29
3 " " " 4	17[2]	3·47	4·53	15	3·52	3·17
4 " " " 5	17	4·50	5·33	21	4·53	3·71
5 " " " 6	24[2]	5·50	6·62	12	5·67	4·80
6 " " " 7	21	6·31	8·43	16	6·57	5·59
7 " " " 8	18[2]	7·43	9·96	13	7·53	5·52
8 " " " 9	13	8·37	11·54	10	8·43	6·81
9 " " " 10	6	9·42	11·60	13	9·62	7·37
10 " " " 11	2	10·26	11·60	10	10·27	6·86
11 " " " 12	3	11·38	16·20	7	11·25	8·50
12 " " " 13	1	12·66	19·72	4	12·51	8·35
13 " " " 14	4	13·60	17·21	1	13·55	6·07
14 " " " 15	3	14·26	21·47	–	–	–
15 " " " 16	2	15·54	25·74	4	15·42	11·98
16 " " " 17	–	–	–	2	16·60	9·05
17 " " " 18	2	17·34	18·06	4	17·35	13·77
18 " " " 19	1	18·19	36·29	4	18·27	11·89
19 " " " 20	1	19·94	23·21	1	19·72	12·66
20 " " " 21	2	20·23	[1]	–	–	–
21 " " " 22	1	21·95	49·04	2	21·22	15·42
23 " " " 24	–	–	–	1	23·21	19·94
24 " " " 25	1	24·53	24·28	1	24·28	24·53
25 " " " 26	–	–	–	2	25·25	14·38
36 " " " 37	–	–	–	1	36·29	18·19
49 " " " 50	–	–	–	1	49·04	21·95
51 " " " 52	1	51·96	58·26	–	–	–
58 " " " 59	–	–	–	1	58·26	51·96

[1]Not shown in 1921.
[2]Montreal and Jesus Islands are shown combined here for purposes of comparison with 1921; elsewhere shown separately.

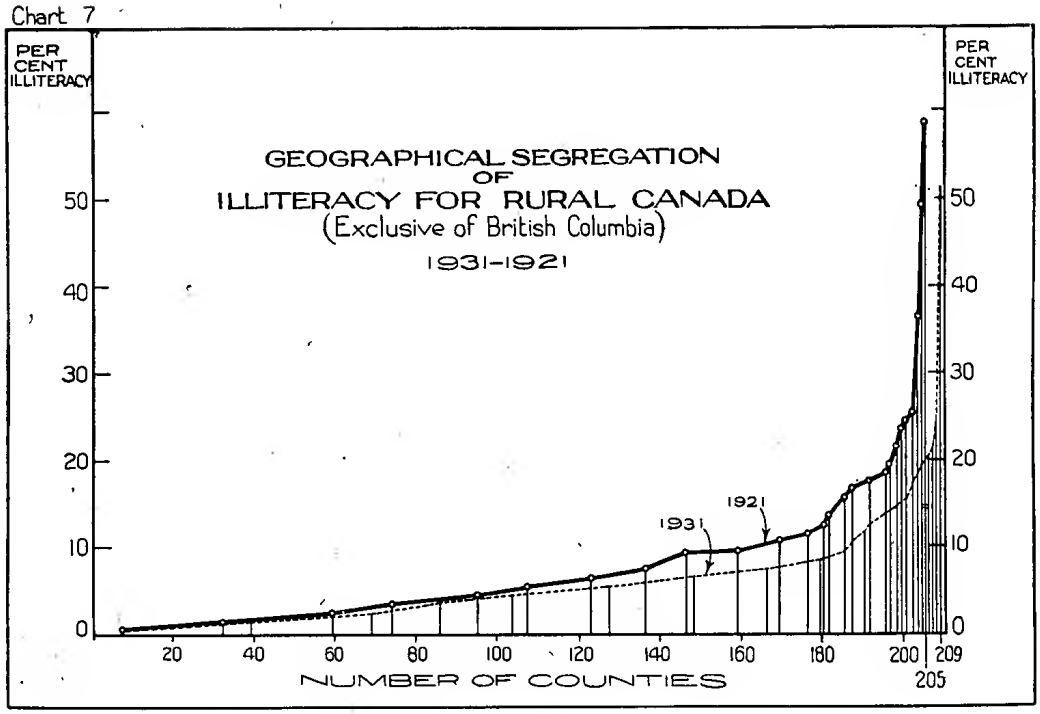
First as to the facts of improvement in the rural population: in all classes there was a marked improvement in the ten years, county for county, except the class which had less than 1 p.c. illiterate in 1921. In the 7 counties in this class there was a slight rise, but in the 7 counties which had less than 1 p.c. illiterate in 1931 there was a definite improvement. The number of counties with more than the present percentage illiterate in Canada (3·79 for Canada as a whole) were reduced from 131 in 1921 to 123 in 1931 and those with less than the present illiteracy increased from 74 in 1921 to 86 in 1931, *i.e.*, 12 counties or census divisions were added to the low illiteracy class. The number of counties with 10 p.c. illiterate or more were reduced from 46 in 1921 to 24 in 1931, an improvement of almost 50 p.c. The number with an illiteracy rate of 20 p.c. or more was reduced from 9 in 1921 to 5 in 1931. Thus geographically a very appreciable improvement was effected.

The segregation of illiteracy in the interval can be illustrated by a chart showing how the illiteracy above the average was crowded into fewer counties in 1931 than in 1921. From Chart 7 it appears that the greatest change took place in counties with 10 p.c. illiterate and over. It is clear, however, that even in 1931 illiteracy was rather widespread geographically, for 123 out of the 209 shown had more than the average illiteracy.

The urban illiteracy rates for cities of 30,000 and over—for the population as a whole and for the Canadian born—are shown in Table 17, Part II.

Comparison of Immigrants of Various Years of Arrival.—A comparison between the immigrants arriving at different years is misleading because the earlier immigrants are now older and *ipso facto* more illiterate than the later ones. Accordingly a correction must be made for this error before the comparison is adequate. Statement XXIII is first shown in its crude state before such corrections are made. It will be seen that in the case of the British-born there are no marked differences in the different arrivals except in the case of those arriving before 1901, all of whom would be over 30 years of age in 1931. In the case of the foreign born there would seem to be a tendency for the more recent arrivals to be more illiterate than the earlier, except, of course, the pre-1901 arrivals. However, this cannot be decided until a correction has been made.

Chart 7



XXIII.—NUMBER AND PERCENTAGE ILLITERATE OF THE IMMIGRANT POPULATION 10 YEARS OF AGE AND OVER, BY NATIVITY, YEAR OF IMMIGRATION AND SEX, CANADA[2], 1931

Year of Immigration	Illiterates 10 Years of Age and over					
	Total Immigrant		British Born[1]		Foreign Born	
	No.	P.C.	No.	P.C.	No.	P.C.
Both sexes	98,712	4·42	6,714	0·57	91,998	8·65
1926-1931	22,143	5·51	682	0·45	21,461	8·62
1921-1925	7,746	2·91	568	0·38	7,178	6·06
1916-1920	4,062	2·07	496	0·42	3,566	4·52
1911-1915	18,901	3·98	986	0·37	17,915	8·67
1901-1910	28,627	4·57	1,642	0·49	26,985	9·22
Before 1901	16,360	6·38	2,167	1·52	14,193	12·46
Not stated	873	11·17	173	4·17	700	19·10
Male	52,938	4·21	3,734	0·60	49,204	7·73
1926-1931	13,014	5·36	390	0·46	12,624	7·96
1921-1925	3,344	2·34	291	0·39	3,053	4·52
1916-1920	2,214	2·42	236	0·48	1,978	4·61
1911-1915	10,372	4·02	501	0·37	9,871	7·92
1901-1910	15,129	4·06	970	0·49	14,159	8·02
Before 1901	8,304	5·70	1,252	1·53	7,052	11·03
Not stated	561	13·15	94	4·21	467	22·96
Female	45,774	4·71	2,980	0·55	42,794	10·02
1926-1931	9,129	5·75	292	0·43	8,837	9·77
1921-1925	4,402	3·57	277	0·38	4,125	8·11
1916-1920	1,848	1·76	260	0·38	1,588	4·41
1911-1915	8,529	3·93	485	0·36	8,044	9·82
1901-1910	13,498	5·32	672	0·49	12,826	11·05
Before 1901	8,056	7·28	915	1·51	7,141	14·27
Not stated	312	8·80	79	4·12	233	14·29

[1]Including 9,535 returning Canadians, of whom 516 or 5·41 p.c. were illiterate.

[2]Nine provinces only.

In making a correction for age we have the age distribution of immigrants by year of arrival, but not age and illiteracy. If, therefore, we find the illiteracy expectations of each arrival class by assuming the illiteracy of Canada at each age for every class, we have a correcting factor (see Table 18, Part II).

The comparative percentages illiterate for the different years of arrival when thus corrected for age are:—

1926-31	5·51
1921-25	2·68
1911-20	2·62
1901-10	2·91
Before 1901	2·72

There does not appear to be any significant difference between the various dates of arrival except in the case of the last five years. There is no doubt that these were the most illiterate class and Statement XXIII shows that this applies only to the foreign born. The Census of Wage-Earners and Unemployment also shows that the arrivals of this period showed the greatest amount of unemployment. This in turn could be associated with their occupation class. In other words, the *class* of immigrants arriving in 1926-31 was more illiterate than the classes arriving in former years. This is a very important point in the consideration of whether or not illiteracy can be eliminated.

CHAPTER IV

SOCIAL AND ECONOMIC CONCOMITANTS OF ILLITERACY

Introduction.—The Census of 1931 tabulated a mass of material which enables us for the first time to obtain direct information on the status or behaviour of the illiterate person as compared with the literate. In earlier censuses a study of this kind had to depend upon inferences, *e.g.*, if the illiterate person lived in a remote or isolated area, if he belonged to a certain race, if he was an old person, if he lived in a province more illiterate than other provinces and so on, this had to serve the purpose of explaining his illiteracy and his behaviour had to be inferred. There are obvious dangers attending such inferences. If drawn with care and skill, there is no doubt that they have a high degree of probability, but the average person wants direct evidence. There is always room for argument as to whether the person in a remote locality is illiterate because he is in that locality or was illiterate before he went there; that he is illiterate because he belonged to a certain race or that that particular race happened to be placed in an environment where school opportunities were lacking and could not help itself and so on. Furthermore, the question is always open as to whether or not illiteracy has any bearing upon the person's behaviour or economic status.

In the Census of 1931 there are two main sources of information on these points: (1) the family composition of families with illiterate heads as compared with those with literate heads, also the earnings of these families; (2) illiteracy among individuals other than heads as associated with occupation and earnings. In addition to this there is a mass of information on illiteracy pertaining to persons in benevolent, penal and mental institutions. Sufficient material is available therefore, to build up a fair concept of what illiteracy signifies.

SOCIAL ASPECTS OF ILLITERACY

The Family Composition.—The tabulation on families shows the number of families and family heads, the number of persons living at home including own children, guardianship children (children being classified by age as "all ages", 7-14 and 15 and over) and other dependents. They also show children gainfully occupied with their earnings, whether the family lives in an owned home, in a home rented at first hand, in a subrented home or as free tenants. The family heads for which all this information is obtained, are divided into nine classes: (1) families with two married heads living together; (2) with one married head, the wife absent; (3) with one married head, the husband absent; (4) with widower head; (5) with widow head; (6) with divorced male head; (7) with divorced female head; (8) with single male head, and (9) with single female head. The information covers the illiteracy of the head, that of the own children 7-14 years of age and that of the own children 15 years and over. In Canada in 1931 the number of persons 15 years of age and over who were illiterate was 297,386 and the heads and their own children in all family tables account for 214,796 of these illiterates. The remaining 82,590 illiterates were dependents other than own children and persons not connected with families such as unmarried roomers, institutional cases, persons employed in institutions, domestic servants, etc.

The tabulations show the composition of the families of literate and illiterate persons according to the following categories: (1) the number with own children living at home; (2) the number with guardianship children; (3) the number of own children, all ages, 7-14 and 15 and over; (4) the same for guardianship children; (5) the number of dependents other than children, husbands and wives. These are shown separately for literates and illiterates, first for families with two married heads, in Table 19, Part II.

Greater proportions of children under 7 may be taken among other things as evidence of younger parents, so that on the whole the cases where both father and mother are literate belong to the youngest class, and where both are illiterate to the oldest. Of the own children, 33·8 p.c. of the children with both parents literate are under 7, 29·6 p.c. in the class with wife illiterate, 29·4 p.c. with husband illiterate and 26·8 p.c. where both are illiterate. This in turn may explain

why the class with both parents illiterate has a smaller number of children living at home per family and a larger number of guardianship children (who may be grandchildren) than the other illiterate classes. The both literate class has the largest number of dependents other than children and the smallest number both of own and guardianship children. The both illiterate have the largest proportion of those without own children. It remains now to compare the other literate and illiterate classes by marital condition.

In order to see clearly the differences between the literate and illiterate classes, it is necessary to take each aspect by itself. Since the ages of the children merely indicate the probable ages of the parents and in this way indicate one of the causes of illiteracy, the chief subjects of comparison are: (1) the number without dependents; (2) the number with own children; (3) the number with guardianship children, and (4) the number with other dependents. These will be arranged as follows:—

XXIV.—PERCENTAGES OF FAMILIES WITHOUT DEPENDENTS AND FAMILY COMPOSITION FOR (a) ALL FAMILIES AND (b) FAMILIES WITH CHILDREN OR OTHER DEPENDENTS, BY MARITAL AND LITERACY STATUS OF HEAD, CANADA, 1931

Mnritnl Status of Head	P.C. without Dependents		No. per Family of					
			Own Children		Guardianship Children		Other Dependents	
	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head
ALL FAMILIES								
Two married heads—								
Both literate	1	1	2·28	–	0·031	–	0·036	–
Wife illiterate	1	1	–	2·97	–	0·049	–	0·030
Husband illiterate	1	1	–	3·15	–	0·065	–	0·036
Both illiterate	1	1	–	2·49	–	0·069	–	0·028
One head only—								
Married male head	0·64	0·71	0·71	0·62	0·016	0·019	0·052	0·025
Married female head	0·14	0·18	1·84	2·15	0·031	0·065	0·023	0·018
Widowed male head	0·35	0·38	1·49	1·50	0·033	0·061	0·066	0·041
Widowed female head	0·25	0·27	1·60	1·63	0·052	0·10	0·034	0·020
Divorced male head	0·63	0·65	0·58	0·59	0·014	–	0·050	0·019
Divorced female head	0·22	0·17	1·43	1·77	0·014	0·015	0·030	0·045
Single male head	0·87	0·88	0·0001	0·0002	0·032	0·045	0·14	0·013
Single female head	0·83	0·72	0·15	0·18	0·066	0·096	0·13	0·11
FAMILIES WITH CHILDREN OR OTHER DEPENDENTS								
Married male head	–	–	1·94	2·12	0·043	0·066	0·14	0·086
Married female head	–	–	2·16	2·63	0·36	0·80	0·027	0·022
Widowed male head	–	–	2·29	2·41	0·050	0·098	0·10	0·066
Widowed female head	–	–	2·13	2·23	0·070	0·14	0·045	0·027
Divorced male head	–	–	1·55	1·68	0·036	–	0·13	0·053
Divorced female head	–	–	1·83	2·13	0·018	0·018	0·039	0·055
Single male head	–	–	0·001	0·002	0·25	0·37	1·07	1·03
Single female head	–	–	0·089	0·64	0·40	0·35	0·77	0·39

[1] Figures not available.

It will have become apparent that there is good reason for comparing the different attributes by marital status, since evidently this has a considerable bearing upon these attributes. In the matter of own children or children born in the family and living at home it is clear that the illiterate class has invariably more per family than the literate, the largest number being in families with two married heads with the wife illiterate; in the case of the one-head family the largest number of children belongs to the family with an illiterate married female head, the husband absent. A most striking case is the number of own children to single females, the illiterate females showing over seven times as many as the literate, counting only those families with dependents; if we reckon the number per family on the basis of those without as well as with children, the illiterate single female has about twelve times as many children per family as the literate, *i.e.*, not only have such single illiterate females as have children more children but there are more of the illiterate who have some children than of the literate. Thus there seems to be a connection between illiteracy and illegitimacy but before deciding the sense in which this connection is to be interpreted it is well to remember that there is also an unmistakable connection between illiteracy and size of family. This is true when this size is made up of guardianship children as well as own

children. At the same time it is evident that the literate classes show greater proportions of dependents who are not children than the illiterate classes. Illiteracy seems to be decidedly favourable to multiplicity of children, but the "how" and the "why" are not clear. The question is important enough to justify deeper probing. Does the larger number of own children among illiterate single females shown above hold under different conditions, or is it probably a matter of class, *i.e.*, is it probable, since the illiterate persons are of different racial and occupational groups from the literate, that illegitimacy is a characteristic of that class rather than of illiteracy? The following statement shows the number of own children, literate and illiterate, to single female heads of family for rural and urban, by size groups, Canadian, British, United States and other foreign born in 1931.

XXV.—NUMBER OF SINGLE FEMALE HEADS OF FAMILIES, NUMBER OF OWN CHILDREN AND NUMBER PER 10,000 SINGLE FEMALE HEADS, BY NATIVITY AND LITERACY OF HEAD, RURAL AND URBAN BY SIZE GROUPS, CANADA, 1931

Nativity	No. of Single Female Heads		No. of Own Children			
			Of Single Female Heads		Per 10,000 Single Female Heads	
	Literate	Illiterate	Literate	Illiterate	Literate	Illiterate
TOTAL	40,209	479	598	84	149	1,754
Rural—						
Canadian born	7,168	283	247	64	345	2,261
British born	832	4	30	2	361	5,000
United States born	274	–	24	–	876	–
European born	184	17	24	4	1,304	2,353
Born elsewhere	6	1	–	–	–	–
Urban, 30,000 and over—						
Canadian born	15,342	56	74	3	48	536
British born	3,432	5	39	–	114	–
United States born	762	1	2	–	26	–
European born	519	16	19	5	366	3,125
Born elsewhere	35	5	2	1	571	2,000
Urban, 1,000-30,000—						
Canadian born	8,242	52	82	1	99	192
British born	841	5	17	–	202	–
United States born	291	1	8	–	275	–
European born	128	4	7	1	547	2,500
Born elsewhere	9	–	–	–	–	–
Urban, under 1,000—						
Canadian born	1,834	23	19	2	104	870
British born	154	1	1	–	65	–
United States born	105	–	1	–	95	–
European born	50	4	2	1	400	2,500
Born elsewhere	1	1	–	–	–	–

Class for class it is indisputable that the illiterates show many times as much illegitimacy as the literates, but undoubtedly the class has a great deal to do with it. Of course we cannot trust the proportions based upon very small numbers, but it is clear that the literates of the European born in cities over 1,000 show more illegitimacy than the illiterates of the Canadian born and that rural shows more than urban.

A number of features serve to complicate the problem of comparison. One, in particular, is the incomparability in number between the literate and illiterate families with single female heads, the latter being much smaller. This tends to under-statement of illegitimacy in illiterate families. Thus there are only 7 families of illiterate single females among those "born elsewhere". Even 1 own child to these families would mean a ratio of 1,429 per 10,000, *i.e.*, higher than any rate among the literates. The effects of size may be gathered by comparing the proportion of families of single female heads as a percentage of all families among the literates and illiterates as follows:—

	Literate heads	Illiterate heads
Total families	2,268,196	151,164
Families with single female head	40,209	479
Families with single female head as percentage of all families	1·77	0·32

Thus for every illiterate single female head per 100 families in the population there are 5·53 literate female heads. The literate single female heads are looking after themselves or dependents other than children to more than five times the extent that illiterate single females are; whereas an appreciable share of the reason why the illiterate single females are family heads at all is because they have children of their own. Thus the figures give no idea of the prevalency of illegitimacy among the literate and illiterate females of the population as a whole in contradistinction to family heads. The family figures are a complex of many things including illegitimacy and capacity or willingness to assume family responsibilities. Taking a general view of the data of this section there seems to be little doubt that illiterate heads as a class show more children per family, smaller proportions undertaking responsibilities for dependents other than children and more evidences of illegitimacy than literate heads.

Marital Condition of Illiterates.—In 1931 there were, in all, 2,419,360 families representing 9,346,195 persons, *i.e.*, the persons who will now be studied under illiteracy and literacy status will account for the total population of Canada less some 1,030,600 who were not included in families for reasons already given. In the families were, of course, 2,419,360 "heads", *i.e.*, what might be called economic heads, but if we consider both husband and wife as heads, the families mentioned had 4,276,465 male and female heads, *i.e.*, there were 2,419,360 economic heads and 1,857,105 help-mates. Of the number of families with one head only, 270,312 were families of only one person, while in the case of families with two heads, 1,412,157 or 76 p.c. had children living at home.

The heads thus described were divided as follows:—

XXVI.—FAMILIES, BY MARITAL AND LITERACY STATUS OF HEAD AND NUMBER AND PERCENTAGE ILLITERATE, CANADA, 1931

Marital and Literacy Status of Head	No. of Families	No. of Heads in Marital Class	Illiterate Heads in Marital Class	
			No.	P.C.
TOTAL	2,419,360	4,276,465	190,198	4·45
Literate	2,268,196	4,086,267		
Illiterate	151,164	190,198		
Two married heads	1,857,105	3,714,210	159,714	4·30
Both literate	1,736,425			
Wife illiterate	32,010			
Husband illiterate	49,636			
Both illiterate	39,034			
One married male head	53,657	53,657	4,067	7·58
Literate	49,590			
Illiterate	4,067			
One married female head	49,656	49,656	1,917	3·86
Literate	47,739			
Illiterate	1,917			
Widowed male head	92,612	92,612	8,243	8·90
Literate	84,369			
Illiterate	8,243			
Widowed female head	193,013	193,013	10,907	5·65
Literate	182,106			
Illiterate	10,907			
Divorced male head	1,961	1,961	54	2·75
Literate	1,907			
Illiterate	54			
Divorced female head	2,184	2,184	66	3·02
Literate	2,118			
Illiterate	66			
Single male head	128,484	128,484	4,751	3·70
Literate	123,733			
Illiterate	4,751			
Single female head	40,688	40,688	479	1·18
Literate	40,209			
Illiterate	479			

The order of the percentages illiterate by class of head is interesting:—

1. Single female	1·18	6. Two married heads	4·30
2. Divorced male	2·75	7. Widowed female	5·65
3. Divorced female	3·02	8. One married male	7·58
4. Single male	3·70	9. Widowed male	8·90
5. One married female	3·86		

This order, however, is not very significant and probably not deserving of further analysis, for it becomes obvious that the order is also one of age, *e.g.*, the widowed male is probably the oldest and the single female is probably the youngest or nearly the youngest in the group. We have already seen that the older the person the more illiterate he is apt to be. We could easily prove this by correcting the list for age, since we know the age by conjugal condition, but it does not seem to be worth while. The illiteracy of the one married male head, however, cannot be thus explained away and seems to deserve attention.

What seems to be worth while analysing is the distribution of the 4,086,267 literate and the 190,198 illiterate heads according to marital state as follows:—

XXVII.—PERCENTAGES OF TOTAL LITERATE AND ILLITERATE HEADS OF FAMILIES IN EACH MARITAL CLASS, CANADA, 1931

Marital Status of Head	Percentage of Total Number of Heads of Families	
	Literate	Illiterate
TOTAL	100·00	100·00
Two married heads	86·99	83·97
One married male	1·21	2·14
One married female	1·17	1·01
Widowed male	2·06	4·33
Widowed female	4·46	5·73
Divorced male	0·047	0·028
Divorced female	0·052	0·035
Single male	3·03	2·50
Single female	0·98	0·25

While the undue share of the widowed claimed by the illiterates may have something to do with age, it is obvious that the above figures are significant. Thus the literate element has a larger proportion of single persons undertaking family responsibilities (this, of course, means that they take responsibilities for dependents other than their own children) than the illiterate element. On the other hand, the illiterate element has a larger proportion than the literate of males living apart from their wives. That this is not the case with female married heads with their husbands absent might be explained by the probability that these absent husbands may be absent merely temporarily and still supporting the family; it is difficult to imagine this as true in the case where the wife is absent. The literates have a greater share of divorcés than the illiterate, which is not difficult to understand.

Taking all the foregoing figures into consideration, it appears obvious that the literate and illiterate classes show a marked distinction in marital status.

Size of Families.—The next step in comparing the literate and illiterate elements is to analyse the size of families. This, of course, may have two opposite aspects. In the case of the larger family the head is shouldering greater responsibility; on the other hand, the larger family may be thrust upon the head or undertaken by the head through ignorance and the responsibility may be beyond what he can handle. Another possible viewpoint is that the family of the one class may choose to live at home longer than that of the other class. As before, the literates and illiterates will be classed by marital condition of heads.

XXVIII.—PERSONS LIVING IN FAMILIES, FAMILIES HAVING NO DEPENDENTS AND AVERAGE SIZE OF FAMILY AND OF FAMILY WITH DEPENDENTS, CANADA, 1931

Marital and Literacy Status of Head	Persons Living in Families				Families with No Dependents
	No.	No. per Family	No. per Family with Dependents	No. per Family, Deducting One Head Where There Are Two	
TOTAL	9,346,195	3·86	[1]	3·10	[1]
Two married heads—					
Both literate	7,538,710	4·34	[1]	3·34	[1]
Wife illiterate	161,562	5·05	[1]	4·05	[1]
Husband illiterate	260,650	5·25	[1]	4·25	[1]
Both illiterate	179,079	4·59	[1]	3·59	[1]
One married head—					
Literate male	87,980	1·77	3·13	1·77	31,528
Illiterate male	6,785	1·67	3·27	1·67	2,869
Literate female	138,320	2·90	3·22	2·90	6,917
Illiterate female	6,203	3·24	3·73	3·24	348
Widowed head—					
Literate male	218,734	2·59	3·44	2·59	29,290
Illiterate male	21,480	2·61	3·58	2·51	3,103
Literate female	488,636	2·68	3·24	2·68	45,540
Illiterate female	29,989	2·75	3·40	2·75	2,940
Divorced head—					
Literate male	3,135	1·64	2·72	1·64	1,193
Illiterate male	87	1·61	2·74	1·61	35
Literate female	5,231	2·47	2·89	2·47	472
Illiterate female	187	2·83	3·20	2·83	11
Single head—					
Literate male	144,572	1·17	2·33	1·17	108,037
Illiterate male	5,558	1·17	2·40	1·17	4,173
Literate female	48,636	1·21	2·26	1·21	33,509
Illiterate female	660	1·38	2·37	1·38	347

[1] Figures not available.

The deeper this sort of thing is probed the more difficult it is to keep out irrelevant or misleading features. Where we come to the size of family, we have in most cases a larger family in the illiterate than in the literate class. Exceptions are the one married male and the divorced male. In using the size of family as a criterion, however, it must be remembered that the size of the family with two married heads is larger because it has two heads whereas the others have only one. Consequently, for some purposes of comparison (*i.e.*, not connected with the responsibility aspect) one of the heads of the first four classes should be deducted, leaving 3·34, 4·05, 4·25 and 3·59 persons per family, respectively for the four cases of two married heads. From this basis, the largest family is found among the two married heads with the husband illiterate and the smallest in the case of the single male head. The order is as follows for size of family:—

XXIX.—AVERAGE SIZE OF FAMILY, BY MARITAL AND LITERACY STATUS OF HEAD, CANADA, 1931

Marital and Literacy Status of Head	Average Size of Family	Marital and Literacy Status of Head	Average Size of Family
Two married heads[1]—			
1. Husband illiterate	4·25	11. Widowed male head, literate	2·59
2. Wife illiterate	4·05	12. Divorced female head, literate	2·47
3. Both illiterate	3·59	13. One married male head, literate	1·77
4. Both literate	3·34	14. One married male head, illiterate	1·67
5. One married female head, illiterate	3·24	15. Divorced male head, literate	1·64
6. One married female head, literate	2·90	16. Divorced male head, illiterate	1·61
7. Divorced female head, illiterate	2·83	17. Single female head, illiterate	1·38
8. Widowed female head, illiterate	2·75	18. Single female head, literate	1·21
9. Widowed female head, literate	2·68	19. Single male head, literate	1·17
10. Widowed male head, illiterate	2·61	20. Single male head, illiterate	1·17

[1] One head deducted.

In this order it is noticeable that in the first ten, *i.e.*, the ten largest families, there are only three cases of literate heads while there are seven of illiterate; in the second ten, *i.e.*, the ten smallest families, there are six occurrences of literate heads and only four of illiterate. Clearly the larger families go with illiteracy even if we admit that age has something to do with the position of the widowed in the order. The widowed both literate and illiterate appear in the higher order because of age, but this is no reason why the illiterate widower would have a larger family than the literate. Again the position of the single male illiterate is ambiguous. It may be considered as evidence that the illiterate person is less capable of undertaking responsibility for dependents, or of something else. There is no doubt that the general position of divorced and single heads is due to age, *i.e.*, they are younger than the others. Similarly the position of the divorced illiterate female as compared with the divorced literate female is brought out in this order, whereas it would not be noticeable if an arrangement like this had not been made. The numbers involved in the case of divorced people are, of course, very small; consequently, the facts in connection with them should not be over-stressed.

Educational Status of Children of Literate and Illiterate Families.—Educational status in this connection will be taken to mean ability or inability to read. There are also figures on school attendance which will be analysed later, this school attendance referring only to children 7-14 years of age. At present attention will be confined to the literacy of own children 7-14 years and 15 years and over. Again the figures will be given by marital status as this seems to have a great deal to do with the condition of the children.

Table 21, Part II, shows the most striking differences between literate and illiterate heads that we have yet encountered. In the case of families with two married heads, it is seen that not only are the children of illiterate parents more illiterate than the children of literate, but the illiteracy of the children seems to be proportionate to the degree of literacy of parents. Thus when both parents are illiterate the illiteracy of the children is more than twice as great as when only one parent is illiterate. There are thirty-four degrees of illiteracy among own children shown in the above-mentioned table, which for purposes of comparison are arranged in ascending order of percentages illiterate, as follows:—

XXX.—PERCENTAGES OF CHILDREN ILLITERATE ARRANGED IN ORDER OF MAGNITUDE, BY MARITAL AND LITERACY STATUS AND SEX OF HEAD OF FAMILY AND AGE GROUP OF CHILDREN, CANADA, 1931

Status of Head			Children	
Marital	Literacy	Sex	Age Group	P.C. Illiterate
1. Divorced	Literate	Female	15+	0·31
2. Two married	Both literate	.....	15+	0·43
3. One married	Literate	Female	15+	0·58
4. One married	Literate	Male	15+	0·69
5. Divorced	Literate	Male	15+	0·75
6. Widowed	Literate	Female	15+	0·82
7. Widowed	Literate	Male	15+	0·86
8. Divorced	Literate	Male	7-14	1·32
9. Widowed	Literate	Female	7-14	1·62
10. Widowed	Literate	Male	7-14	2·08
11. Two married	Both literate	.....	7-14	2·10
12. One married	Literate	Female	7-14	2·23
13. Single	Literate	Female	15+	2·25
14. Divorced	Literate	Female	7-14	2·31
15. One married	Illiterate	Male	7-14	2·61
16. Two married	Wife illiterate	.....	15+	6·10
17. Divorced	Illiterate	Female	15+	6·52
18. Two married	Husband illiterate	.....	15+	6·75
19. Two married	Wife illiterate	.....	7-14	9·24
20. Two married	Husband illiterate	.....	7-14	9·24
21. Divorced	Illiterate	Female	7-14	10·42
22. Single	Illiterate	Female	7-14	11·11
23. One married	Illiterate	Female	15+	13·28
24. One married	Illiterate	Female	7-14	13·63
25. Widowed	Illiterate	Female	7-14	14·54
26. Widowed	Illiterate	Male	7-14	14·69
27. Widowed	Illiterate	Male	15+	15·71
28. Widowed	Illiterate	Female	15+	16·11
29. One married	Illiterate	Male	15+	17·97
30. Divorced	Illiterate	Male	15+	18·75
31. One married	Illiterate	Male	7-14	19·16
32. Two married	Both illiterate	.....	15+	19·24
33. Two married	Both illiterate	.....	7-14	20·41
34. Single	Illiterate	Female	7-14	42·86

There is only one case worse than that of families with two parents both illiterate, *viz.*, the illiterate single female head. It is also striking that even the literate single female head comes twenty-second in the list, this being the only case where literate parents show as large a proportion of illiteracy among the children as illiterate parents. There may or may not be significance in the fact that divorced females show up so well. It is, of course, obvious that more illiteracy is to be expected among children 7-14 than among older children, for some of the 7-14 have still to begin school. This makes the position of illiterate parents all the more arresting, for even the 15-year-old children of the best of them are more illiterate than the 7-14-year-olds of literate parents (except the single female).

The family statistics account for 73,754 illiterate own children 7 years of age and over in Canada. Of these, 33,360 are children of illiterate parents although there are only 151,164 families with illiterate heads as compared with 2,268,196 literate families. If the illiterate families had the same proportion of illiterate children as the literate, they would have only 2,692 illiterate children instead of 33,360, so that the remainder of 30,668 or over 41 p.c. of the illiteracy of the children may be attributed to the illiteracy of the parents plus some arising from their marital status. It is noteworthy that the cases of literate parents where both are alive but only one present show more illiteracy among the children than where both parents are present and, in the case of children 7-14, more than among widowed parents.

There is no doubt, then, that the illiteracy of the parents reacts in illiteracy of the children. This condition is subject to variations according as it is the mother or father that is illiterate and according to differences in marital status. On the whole, normal marital status, such as two married heads or widowed heads, makes for less illiteracy than the abnormal, such as one married head present and the other absent, or single heads.

CERTAIN ECONOMIC FEATURES OF ILLITERACY

Tenancy.—Among the curious items of information on illiteracy tabulated in the 1931 Census, the family tables show the tenancy of literate and illiterate families by the marital status of the head. The family composition and the classes of marital status are as already shown. The tenancy is classified under "owners", "first tenants", "sub and free tenants". This is all that is tabulated in reference to housing conditions, but it gives some indication of these conditions. The facts are as follows:—

XXXI.—NUMBER OF FAMILIES IN EACH TENANCY CLASS, BY MARITAL AND LITERACY STATUS OF HEAD, CANADA, 1931

Marital Status of Head	Families Having									
	Literate Head					Illiterate Head				
	Total	Owner	First Tenant	Sub and Free Tenant	Not Stated	Total	Owner	First Tenant	Sub and Free Tenant	Not Stated
TOTAL	2,268,196	1,269,816	795,121	202,473	177	151,164	100,806	36,744	13,588	12
Two married heads—										
Both literate	1,736,425	971,870	622,754	141,391	89	–	–	–	–	
Wife illiterate	–	–	–	–	–	32,010	20,642	8,853	2,511	
Husband illiterate	–	–	–	–	–	49,636	33,449	12,666	3,520	–
Both illiterate	–	–	–	–	–	39,034	26,875	8,147	4,001	5
One head only—										
Married male	49,590	23,857	20,012	5,682	28	4,067	2,012	1,666	386	1
Married female	47,739	13,820	16,482	17,418	10	1,917	898	533	485	1
Widowed male	84,369	57,025	18,736	8,598	2	8,243	6,112	1,214	917	–
Widowed female	182,106	103,937	56,158	21,883	8	10,907	7,055	2,337	1,512	3
Divorced male	1,907	1,024	662	220	1	54	39	8	7	–
Divorced female	2,118	502	889	726	–	66	26	15	25	–
Single male	123,733	80,249	38,992	4,381	35	4,751	3,385	1,195	168	
Single female	40,209	17,532	20,436	2,174	4	479	313	110	56	

Now, reducing the various items to percentages of total families of each category, we have:—

XXXII.—TENANCY CLASS AS PERCENTAGE OF MARITAL CLASS, BY LITERACY STATUS OF HEAD OF FAMILY, CANADA, 1931

Marital Status of Head	Owner		First Tenant		Sub and Free Tenant		Not Stated	
	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
TOTAL	56·0	66·7	35·1	24·3	8·9	9·0	0·008	0·008
Two married heads—								
Both literate	56·0	–	35·9	–	8·1	–	0·005	–
Wife illiterate	–	64·5	–	27·7	–	7·8	–	–
Husband illiterate	–	67·4	–	25·5	–	7·1	–	–
Both illiterate	–	68·9	–	20·9	–	10·3	–	0·01
One head only—								
Married male	48·1	49·5	40·4	41·0	11·5	9·5	0·06	0·02
Married female	28·9	46·8	34·5	27·8	36·5	25·3	0·02	0·05
Widowed male	67·6	74·1	22·2	14·7	10·2	11·1	0·002	–
Widowed female	57·1	64·7	30·8	21·4	12·0	13·9	0·004	0·03
Divorced male	53·7	72·2	34·7	14·8	11·5	13·0	0·05	–
Divorced female	23·7	39·4	42·0	22·7	34·3	37·9	–	–
Single male	64·9	71·2	31·5	25·2	3·5	3·5	0·03	0·04
Single female	43·6	65·3	50·8	23·0	5·4	11·7	0·01	–

It is clear that these figures on housing are a mere picture of how the literate and illiterate families are situated in regard to tenancy and that only a few marked differences exist.

When tenancy is shown for urban residents, as in Tables 22, and 23, Part II, it is seen that no real differences in tenancy exist between literates and illiterates except that the illiterates tend to ownership more than the literates. This is arresting, as one might expect from figures which will be given presently on earnings, that the tendency would be away from ownership. However, it would seem that the bearing of illiteracy on tenancy, if any, is very obscure.

Employment and Earnings of Wives and Children of Literate and Illiterate Heads.—Another curious item of information tabulated is the number of wives and children earning with their total yearly earnings, in families of two married heads, and the number of children earning with their total earnings in the case of families with only one head. This information is given separately for literate and illiterate families. In this case a separate analysis will be made of families of two married heads from that made of the remaining families as follows:—

XXXIII.—WIVES AND CHILDREN EARNING AND AVERAGE YEARLY EARNINGS, ETC., IN FAMILIES WITH TWO MARRIED HEADS, BY LITERACY OF HEAD, CANADA, 1931

Item	Both Heads Literate	Wife Illiterate	Husband Illiterate	Both Illiterate
Number of wives	1,736,425	32,010	49,636	39,034
Number earning	36,485	729	777	899
Earnings per wife earning	$545.93	$261.21	$289.14	$255.67
Number of children	4,004,076	96,573	159,601	99,908
Number earning	473,079	11,132	19,979	13,383
Earnings per child earning	$551.21	$354.16	$318.99	$302.50
Estimated total earnings of—				
Wives	$ 19,918,256	$ 190,422	$ 224,662	$ 229,847
Children	$260,765,876	$3,942,509	$6,373,101	$4,048,358
Both	$280,684,132	$4,132,931	$6,597,763	$4,278,205
Earnings of wives and children per person in families	$37.23	$25.58	$25.31	$23.89
Wives and children earning per 100 persons in families	6·8	7·3	8·0	8·0

In so far as they go, these figures are very interesting. There seems to be a direct connection between the illiteracy of the family heads and the proportion of wives and children earning; also, almost a gradation of low earnings with degree of illiteracy of the family heads. Their contribution to the family budget in all cases is small but the fact remains that they are wage-earners. It must be remembered, however, that the earnings per person in families mentioned is distributed among all persons in families instead of only among the families with wives and children earning. The amount, then, is to be compared with the earnings of all wage-earners per person in the population. In 1931 the estimated total yearly earnings of wage-earners in Canada was $2,178,534,849 which was $210 *per capita*.

Since most of the wage-earners are in urban centres, a fairer analysis of the earnings of wives and children will be given by the figures of urban families than of both rural and urban as above. The following statement shows the figures of urban families in exactly the same manner as for all families in the preceding statement.

XXXIV.—WIVES AND CHILDREN EARNING AND AVERAGE YEARLY EARNINGS, ETC., IN URBAN FAMILIES WITH TWO MARRIED HEADS, BY LITERACY OF HEAD, CANADA, 1931

Item	Total[1]	Both Heads Literate	Wife Illiterate	Husband Illiterate	Both Illiterate
Number of wives	1,033,439	992,734	12,809	16,811	11,085
Number earning	30,740	29,098	516	529	597
Earnings per wife earning	$561.65	$575.54	$321.69	$311.74	$313.65
Number of children	2,164,135	2,056,131	34,010	48,399	25,595
Number earning	371,510	347,725	7,072	10,743	5,970
Earnings per child earning	$576.73	$590.82	$396.09	$360.31	$359.20
Estimated total earnings of—					
Wives	$ 17,265,214	$ 16,747,063	$ 165,992	$ 164,910	$ 187,249
Children	$214,259,267	$205,442,885	$2,801,148	$3,870,810	$2,144,424
Both	$231,524,481	$222,189,948	$2,967,140	$4,035,720	$2,331,673
Earnings of wives and children per person in families	$54.29	$54.53	$49.53	$48.91	$48.62
Wives and children earning per 100 persons in families	9·4	9·2	12·7	13·7	13·7

[1]Had the earnings in this column been estimated on the total figures for all urban families with two married heads rather than being the sum of the four estimated groups, there would have been slight differences, *e.g.*,
Children { Total, $214,242,387·00; Average, 576·68. Wives { Total, $17,358,878·00; Average, 564·70. Average of both per person in families, $54·30.

When only the urban families are considered, the relative positions of the literates and illiterates are not materially changed, although the earnings per person in families is larger. It is clearly seen here that the illiterate families have larger proportions of wives and children earning but that their earnings per earner are considerably smaller and that also their total earnings contribute less per person in the family population. This places the illiterate families on a lower economic scale than the literate families.

The same facts, but this time for urban families only and for children only, will now be shown for families with heads in other marital conditions.

XXXV.—NUMBER OF CHILDREN, NUMBER OF CHILDREN EARNING AND TOTAL AND AVERAGE EARNINGS IN URBAN FAMILIES WITH ONE HEAD ONLY, BY MARITAL AND LITERACY STATUS OF HEAD, CANADA, 1931

Marital Status of Head	Children			Earnings		
	Total	Earning		Estimated Total	Per Child Earning	Per Person in Families
		Total	Per 100 Persons in Families			
				$	$	$
TOTAL[2]	348,490	151,126	22·62	107,768,381	713.10	161.30
Married male—						
Literate	20,193	6,093	13·0	3,853,030	632.37	81.97
Illiterate	838	296	11·5	119,741	404.53	46.43
Married female—						
Literate	55,548	16,293	18·6	10,274,692	630.62	117.44
Illiterate	1,658	606	24·1	246,557	406.86	98.07
Widowed male—						
Literate	60,903	21,857	20·9	14,992,809	685.95	143.69
Illiterate	3,225	1,273	23·4	532,751	418.50	97.90
Widowed female—						
Literate	192,899	100,098	31·3	75,405,825	753.32	235.43
Illiterate	7,003	3,820	34·1	1,852,471	484.94	165.18
Divorced male—						
Literate	600	123	8·2	60,996	495.90	40.75
Illiterate	11	2	8·0	580	290.00	23.20
Divorced female—						
Literate	2,205	611	15·7	403,981	661.18	104.07
Illiterate	61	17	18·1	7,110	418.24	75.64
Single male—						
Literate	1,179	5	–	2,650	530.00	0.06
Illiterate	23	–	–	–	–	–
Single female—						
Literate	2,117	31	0·08	15,118	487.67	0.40
Illiterate	27	1	0·44	70	70.00	0.31

[1]Includes guardianship children, not included in "children earning" except when adopted.

[2]Had the earnings in this line been estimated on the total figures for all urban families with one head only, rather than being the sum of the various estimated groups, there would have been slight differences, *e.g.*, Total Earnings, $107,642,516; Per Child Earning, $712·27; Per Person in Families, $161·11.

XXXVI.—SUMMARY OF WIVES AND CHILDREN EARNING IN URBAN FAMILIES, CANADA, 1931

Item	Number
Persons earning	4,933,061
Wives earning[1]	30,740
Children earning[2]	522,636
Estimated total earnings of—	
Wives	$ 17,265,214
Children	$322,010,768
Both	$339,275,982
Earnings of wives and children per person	$69

[1]In families with two married heads.
[2]In all families but excluding guardianship children.

As was to be expected, the children of families of one married head have greater proportions earning and their earnings per person in families are considerably larger than in families of two married heads. This is at least partly because they are older children. At the same time, in all cases the children in illiterate families show lower earnings per earner and in nearly all cases have greater proportions working per person in the family. There seems to be no doubt that there is a difference in economic status between literate and illiterate families.

Illiteracy and Occupational Status.—In the foregoing, the measurement of economic status referred only to wives and children. Unfortunately, the earnings of the heads for literate and illiterate families were not tabulated. Information on earnings and occupation of heads was tabulated but this information deals only indirectly with illiteracy. It shows the number of illiterate persons in each occupation, the earnings in this occupation being shown at the same time. From this we can give a parallel statement of the percentage illiterate and the average earnings of each occupation class. This is probably not as good as showing the occupation and earnings of the illiterates themselves, since, no doubt, even within the occupation class the earnings of the illiterates differ from those of the literates. Also, the information deals only with families of two married heads. However, what information there is reveals a great deal. It is proposed here to measure evidence from the correlation between the average earnings of the occupation class and the degree of illiteracy (as shown by the percentage illiterate) of the class. Table 24, Part II, will show the actual occupation class in relation to the earnings. Statement XXXVII and further analysis will show the occupation classes labelled or differentiated not by name but by the scale of average earnings. For the aggregate of the nine provinces it uses the figures of families with two married heads and in nearly all cases excludes from the occupation groups the managerial occupations whose earnings are apt to increase the earnings of the class to the extent of giving misleading results.

XXXVII.—FIFTY OCCUPATION GROUPS SELECTED FROM THE NINE PROVINCES AS HAVING FIFTY OR MORE ILLITERATES ENGAGED IN THE OCCUPATION, BY AVERAGE YEARLY EARNINGS AND PERCENTAGES ILLITERATE, ARRANGED IN DECREASING ORDER OF AVERAGE EARNINGS, CANADA, 1931

No.	Average Earnings	P.C. Illiterate	Average P.C. Illiterate	No.	Average Earnings	P.C. Illiterate	Average P.C. Illiterate
	$				$		
1	1,846	0·53		26	844	12·04	
2	1,718	1·78		27	832	2·51	
3	1,495	0·89		28	818	2·97	
4	1,438	1·18		29	728	6·46	
5	1,419	1·37		30	719	14·71	5·55
6	1,382	0·91		31	670	4·47	
7	1,372	0·97		32	654	10·09	
8	1,364	1·05		33	640	11·34	
9	1,361	0·57		34	624	6·98	
10	1,314	2·62	1·19	35	603	15·25	
11	1,300	1·13		36	598	5·53	
12	1,288	2·93		37	558	4·79	
13	1,269	4·18		38	543	13·14	
14	1,267	2·62		39	532	9·38	
15	1,267	5·31		40	501	6·66	8·76
16	1,245	1·04		41	499	8·00	
17	1,193	3·27		42	493	9·09	
18	1,186	1·99		43	489	10·27	
19	1,072	1·76		44	484	13·68	
20	1,000	1·22	2·65	45	482	10·48	
21	989	1·07		46	480	15·27	
22	986	4·04		47	460	5·64	
23	977	2·85		48	457	14·19	
24	945	2·05		49	353	7·50	
25	893	5·83		50	346	5·54	9·79

Table 24 accounts for 36,146 illiterate heads of families (the economic head only being considered in this case, *i.e.*, the wife is not here counted as a head). The occupation groups are arranged in ascending order of percentage illiterate so that the most illiterate classes are at the foot of the table and the least at the top. Now, examining the last column which shows the average yearly earnings of the class, it is clear that there is a decided trend of decrease in earnings with increase in illiteracy. The mining, labouring, logging and fishing, hunting and trapping classes show the most illiteracy and also the lowest earnings; the printing, warehousing, miscellaneous, finance and transportation groups showing the least illiteracy and also, on the whole, the highest earnings. Railway transportation shows earnings that seem to be out of proportion to its position in the illiteracy scale but, clearly, this group shows much less illiteracy than the average, having only 1·67 p.c. illiterate as compared with 4·75 p.c. in the aggregate of workers. However, exceptional cases are to be expected in any measurement of this kind. An obvious inverse correlation exists between earnings and percentage illiterate. There are thirty-six groups listed in ascending illiteracy order. In the upper eighteen of those there is only one case of earnings less than $1,000, *viz.*, manufacture of rubber products; in the last eighteen there are only six cases with earnings of more than $1,000, *viz.*, textiles, water transportation, non-metallic mineral products, drinks and beverages, laundering and pulp and paper products. In the eight groups with less than 1 p.c. illiterate there were 55,359 heads of whom only 148 were illiterate and the average earnings were $1,484; in the three groups with more than 10 p.c. illiterate containing 207,849 with 22,644 illiterates the average earnings were less than $594. It is a striking fact that, whereas there were three and three-quarters times as many heads in the second set as in the first, the total earnings of the second set were only one and one-half times that of the first.

In Statement XXXVII the occupation class is designated by the average yearly earnings of the class and this is shown in correlation with the percentage illiterate of the class. In the interest of greater precision only such classes were taken as showed, on the aggregate, 50 or more persons illiterate. By this means we avoid such errors as arise from the use of small numbers and uneven size groups, extreme cases also being omitted in accordance with the best usage. In all, there were found fifty classes, a large enough number to give reliable results when the correlation is measured. The (Pearsonian) coefficient of correlation between class of earnings and percentage illiterate was $-\cdot75$. This is usually taken to mean that 56·25 p.c. (the square of $-\cdot75$) of the one is associated in some way with the other. The greatest care must be taken in interpreting this relationship. In connection with this subject in particular it must be stated emphatically that the association does not necessarily mean that low earnings are *caused* by illiteracy, *i.e.*, that the mere inability to read reduces the earning powers drastically, although it probably does to some extent. The correlation here merely says that the class of occupation which has the highest percentage illiterate is the class which is likely to have the lowest earnings. This is probably not because they are illiterate but because their illiteracy and low earning powers spring from a common cause. Already we have seen that the illiterate classes were definitely below par in other respects—marital condition, literacy of children, legitimacy, etc. Whatever was responsible for this disadvantage in these respects also placed them below par in the matter of earnings—not the inability to read which was a mere concomitant of their other attributes.

With this caution it may now be stated that for every unit increase in the illiteracy of the occupation class there is an expected decrease of $64.20 in yearly earnings. In other words, the class which has 5 p.c. illiterate is expected to show annual earnings less by $321 than the class which has no illiteracy. This is not very different from the story already told by the earnings of children of illiterate families as compared with those of literate families. The average earnings per child working of children (urban) with both parents literate was $591; of children with both parents illiterate, $359. In the former case the children (15 years and over) were 0·43 p.c. illiterate; in the latter, 19·25 p.c. This also was direct information and could not be gainsaid. The information in the connection between earnings and illiteracy of heads of families by class of occupation was calculated, as distinct from direct, and the two tell very nearly the same story.

The foregoing points, more definitely than anything so far discussed, to the fact that illiteracy is deeply significant as the car-mark of a social class. Illiteracy is an important social phenomenon, not because a group of people are unable to read but because illiteracy has anti-social concomitants.

Illiteracy and Institutional Cases.—The census gives, for different marital status and literacy of heads of families, the number of families living in institutions. The number of these families, however, is very small, *viz.*, 623 in all, and the particular type of institution is not stated.

The Census of Institutions shows the number of individual persons (not families) living in mental, penal and benevolent institutions and their literacy status. These will now be considered.

Mental Institutions.—On June 1, 1931, there were 31,172—17,021 male and 14,151 female—feeble-minded or insane reported as being in mental institutions. The number of these who were over 10 years of age is given by quinquennial age groups. The ages in all cases refer to age on admission, not present age. The literacy of the person in question is measured by the ability to read *and* write, instead of read only as in the foregoing analysis. The percentage illiteracy of the mental cases by age on admission was as follows:—

XXXVIII.—PERCENTAGES ILLITERATE OF INMATES OF MENTAL INSTITUTIONS, BY AGE ON ADMISSION AND SEX, CANADA, 1931

Age on Admission	P.C. Illiterate in Mental Institutions		
	Both Sexes	Male	Female
TOTAL	17·04	17·55	16·42
10–14	52·09	52·16	52·02
15–19	33·40	32·16	34·87
20–24	19·53	19·14	20·10
25–29	14·68	14·43	15·00
30–34	12·96	13·50	12·33
35–39	12·55	13·52	11·35
40–44	12·46	13·80	10·94
45–49	11·92	13·17	10·58
50–54	11·45	13·94	8·98
55–59	11·09	11·03	11·17
60–64	12·37	13·39	11·14
65–69	12·34	13·39	11·11
70 and over	17·27	17·86	16·70
Not stated	25·27	24·81	25·71

These figures lose most of their value owing to the fact that the ages are as on admission rather than as at present. Thus one of the most striking features, *viz.*, the situation at the ages of 10-14 and 15-19 as compared with older ages is ambiguous since we do not know when these 'teen ages were admitted or how old they are now. An obvious explanation for younger ages being more illiterate is that the mental cases include the insane as well as the feeble-minded. It is doubtful that insanity or potential insanity militates against literacy. The younger element of the mental cases would include only a small proportion of insane, while as the age advances the insane would form larger and larger proportions.

The admissions during the year are about a quarter of the total inmates. The average length of stay is about 7·5 years.

There is a fairly steady progression in the inclusion of literate persons among the mental cases as the age advances, largely due to the increasing proportion insane. The following statement illustrates this point.

XXXIX.—PERCENTAGES OF INMATES OF MENTAL INSTITUTIONS WHO ARE INSANE OR FEEBLE-MINDED AND PERCENTAGES ILLITERATE OF THE INSANE OR FEEBLE-MINDED, BY AGE ON ADMISSION AND SEX, CANADA, JUNE 1, 1931

Age on Admission	P.C. Illiterate of Insane Inmates			P.C. Insane of Total Inmates			P.C. Illiterate of Feeble-Minded Inmates			P.C. Feeble-Minded of Total Inmates		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
TOTAL	9·75	10·78	8·49	77·24	78·59	75·61	41·62	42·27	40·95	22·76	21·41	24·39
10–14	23·33	21·43	26·00	8·37	9·09	7·56	54·72	55·25	54·12	91·63	90·91	92·44
15–19	15·65	14·06	18·00	37·17	40·64	33·04	43·95	44·67	43·19	62·83	59·36	66·96
20–24	10·94	11·01	10·83	72·31	74·93	68·42	42·02	43·42	40·36	27·69	25·07	31·58
25–29	9·07	9·81	8·03	80·06	82·32	77·05	36·90	35·62	38·22	19·94	17·68	22·95
30–34	8·47	9·96	6·58	84·79	87·74	81·32	38·01	38·91	37·31	15·21	12·26	18·68
35–39	9·40	10·87	7·51	85·90	87·71	83·65	31·68	32·24	31·15	14·10	12·29	16·35
40–44	9·19	10·92	7·18	86·82	87·60	85·93	33·82	33·99	33·66	13·18	12·40	14·07
45–49	9·09	10·66	7·38	86·67	87·36	85·93	30·28	30·43	30·12	13·33	12·64	14·07
50–54	8·48	11·00	6·05	87·43	86·14	88·72	32·10	32·09	32·11	12·57	13·86	11·28
55–59	7·69	6·54	8·98	88·62	87·87	89·50	37·32	43·21	29·51	11·38	12·13	10·50
60–64	10·29	10·56	9·97	91·31	89·07	94·01	34·21	36·54	29·17	8·69	10·93	5·99
65–69	10·42	11·29	9·40	92·37	92·33	92·41	35·42	38·46	31·82	7·63	7·67	7·59
70 and over	15·20	16·11	14·35	91·45	90·64	92·22	39·02	34·88	43·59	8·55	9·36	7·78
Not stated	13·00	15·53	10·31	72·76	76·71	68·75	58·90	56·67	60·47	27·24	23·29	31·25

In the case of persons old at the time of admission the percentage illiterate was not much greater than that now obtaining in the general population, for 14·12 p.c. of the persons 70 years and over are illiterate. It may be interesting to show what particular forms of mental disorder show the greatest illiteracy as follows:—

XL.—PERCENTAGES ILLITERATE OF INMATES OF MENTAL INSTITUTIONS, BY PSYCHOSIS, CANADA, JUNE 1, 1931

Psychosis	P.C. Illiterate in Mental Institutions		
	Both Sexes	Male	Female
TOTAL	17·04	17·55	16·42
Traumatic	6·06	5·08	14·29
Senile	14·82	14·99	14·67
Cerebral arteriosclerosis	13·15	14·58	10·14
General paralysis	5·53	5·29	6·67
Cerebral syphilis	7·87	8·26	5·56
Huntington's Chorea	24·24	28·57	21·05
Other brain or nervous diseases	9·62	7·41	13·70
Alcoholic	7·27	7·98	3·92
Due to drugs and other exogenous toxins	14·29	10·53	17·39
Pellagra	25·00	–	33·33
Other somatic diseases	10·91	12·35	9·91
Manic-depressive	8·79	10·19	7·52
Involution melancholia	5·43	5·88	5·20
Dementia praecox	9·14	10·58	7·31
Paranoia and paranoid conditions	9·33	10·61	7·89
Epileptic	13·82	13·53	14·29
Psychoneuroses and neuroses	7·46	6·31	8·89
Psychopathic personality	7·44	6·50	8·70
Feeble-minded (mental deficiency) (without psychosis)	41·62	42·27	40·95
Undiagnosed	22·85	29·37	17·02

The order of illiteracy by type of mental diseases seems to be as follows:—

XLI.—PERCENTAGES ILLITERATE OF INMATES OF MENTAL INSTITUTIONS BY PSYCHOSIS AND PERCENTAGES AS MULTIPLES OF THAT OF THE GENERAL POPULATION, CANADA, 1931

Psychosis	P.C. Illiterate	P.C. Illiterate as Multiple of That of General Population[2] (4·26)
1. Feeble-minded	41·62	9·8
2. Huntington's Chorea	24·24	5·7
3. Senile	14·82[1]	3·5
4. Due to drugs and other exogenous toxins	14·29	3·4
5. Epileptic	13·82	3·2
6. Cerebral arteriosclerosis	13·15	3·1
7. Other somatic diseases	10·91	2·6
8. Other brain or nervous diseases	9·62	2·3
9. Paranoia and paranoid conditions	9·33	2·2
10. Dementia praecox	9·14	2·1
11. Manic-depressive	8·79	2·1
12. Cerebral syphilis	7·87	1·8
13. Psychoneuroses and neuroses	7·46	1·8
14. Psychopathic personality	7·44	1·7
15. Alcoholic	7·27	1·7
16. Traumatic	6·06	1·4
17. General paralysis	5·53	1·3
18. Involution melancholia	5·43	1·3

[1]This has a false position because of the influence of age. In the general population, persons 70 and over are 14 p.c. illiterate.

[2]Percentage of general population unable to read AND write.

Penal Institutions.—On June 1, 1931, the inmates in Canadian penitentiaries were classed by illiteracy and literacy as follows:—

XLII.—LITERACY OF INMATES (ALL OVER 15 YEARS OF AGE) OF DOMINION PENITENTIARIES, BY SEX, CANADA, JUNE 1, 1931

Literacy	Penitentiary Inmates					
	Number			Percentage		
	Both Sexes	Male	Female	Both Sexes	Male	Female
Total inmates	3,748	3,704	44	100·00	100·00	100·00
Can read and write	3,476	3,435	41	92·74	92·74	93·18
Can read only	14	14	–			
Cannot read or write	241	238	3	6·80	6·80	6·82
Not stated	17	17	–	0·45	0·46	–

XLIII.—ILLITERACY OF INMATES OF PENITENTIARIES COMPARED WITH THAT OF THE GENERAL POPULATION 15 YEARS OF AGE AND OVER AND ILLITERACY OF INMATES AS MULTIPLE OF THAT OF POPULATION, CANADA, JUNE 1, 1931

Sex	P.C. Unable to Read and Write[1]		Illiteracy of Inmates as Multiple of That of General Population
	Penitentiaries	Population	
Both sexes	6·80	4·72	1·4
Male	6·80	5·35	1·3
Female	6·82	4·03	1·7

[1]Stated condition only.

The story told by these figures is that there seems to be no great connection between illiteracy class and crime.

XLIV.—PERCENTAGES ILLITERATE OF ADULT AND JUVENILE INMATES OF CORRECTIVE INSTITUTIONS OTHER THAN PENITENTIARIES, BY SEX, CANADA, JUNE 1, 1931

Class	Inmates	P.C. Unable to Read and Write[1]		
		Both Sexes	Male	Female
Adults	2,390	7·61	7·51	8·17
Juveniles	2,353	2·63	1·12	6·10

[1]Stated condition only.

Here again there was no appreciable difference between the inmates of penal institutions and the general population. The adults showed much the same illiteracy rates as persons in the general population between the ages of 50 and 60 while the juvenile males are no more illiterate than are persons under 20 in the general population. This much is noteworthy, however, that the female inmates show more tendency to illiteracy than males whereas the opposite obtains in the population as a whole. This is especially true of juvenile females.

The non-incidence of illiteracy and crime apparent in the data is as striking as the incidence in the other parts of this study. A very possible explanation is that the inmates of penal institutions are not illiterate because some of them are taught to read after being committed. If this is so, it is probable that the real incidence of illiteracy and crime can be seen, not in the case of persons after they are inmates, but in the case of these same persons when first committed.

In the statistical report on criminal offences the following data are given for persons convicted of indictable offences in 1931:—

Number illiterate	464
Elementary grade	26,490
Higher than elementary	420
Not stated	4,168

If we base percentages only on those whose educational status is reported, we can compare them with the rest of the population as follows:—

Percentage illiterate of convicted persons (presumably all over 15 years of age)	1·70
Percentage illiterate of persons in general population (15 years of age and over)	4·72
Per 10,000 of the illiterate persons 15 years of age and over in the population represented among the convictions	16
Per 10,000 of the literate persons in the population among the convictions	46

This cannot be explained by training in the institutions except possibly in the case of recidivists. Indeed, it seems improbable that learning to read after admission is an important factor.

A study of boy delinquents shows the following educational status as compared with that of boys in ordinary schools:—

XLV.—AVERAGE SCHOOL GRADE ATTAINED BY BOY DELINQUENTS AND BOYS IN ORDINARY SCHOOLS, BY SINGLE YEARS OF AGE, CANADA, 1931

Age	Average Grade of	
	Boy Delinquents	Boys in Ordinary Schools
7 years	1·85	1·65
8 "	2·56	2·32
9 "	3·36	3·23
10 "	4·08	4·28
11 "	4·84	5·13
12 "	5·50	6·04
13 "	6·32	7·03
14 "	7·05	7·96
15 "	7·66	8·72

The inference from this table is that the boy delinquents, possibly because they are largely urban, are more advanced at the earliest ages than ordinary boys, but that they lose this start and fall behind from the age of 10 on.

The non-incidence of illiteracy and crime is capable of different interpretations. Among these no serious-minded person should include the likelihood that criminals are more clever than others. The mere fact of being able to read and write is no great indication of cleverness. The number of illiterates being cared for in mental and other institutions leaves less for criminal institutions.

CHAPTER V

LITERACY AND CONJUGAL CONDITION

Introduction.—Undoubtedly, the most important aspect of illiteracy is its connection with conjugal condition and family composition. In Chapter IV the family composition and marital condition were explored fairly exhaustively as social realities, but no mention was made of the bearing of these things upon such matters as comparative fertility and other tendencies which if persistent would bring about very serious results. The chief difficulty in the way of coming to conclusions on the subject of the present chapter is our uncertainty as to whether the illiterates are to be regarded as a social class or as a number of left-overs because of accidental circumstances. To put it figuratively, are the illiterates the peaks of an old mountain which remain because they are a kind of rock which refuses to yield to weathering or are they merely a mountain which has not been exposed to weathering and other processes? The evidence on this point must be forever circumstantial. It is also true that whichever of the two alternatives we accept we are referring only to the *majority* not the *whole*, for, undoubtedly, an element of both kinds exists. We know that there is such a thing as feeble-mindedness which cannot be taught letters and we also know that there are persons in Canada who have no access to schools or probably even books. An effort will be made in Chapter VI, especially on Map II, to show where the latter could very well be found. Again, it is practically certain that this latter class cannot be found in cities except in the case of old persons who, at school age, lived in illiterate communities. If, however, young people of Canadian birth in cities in 1931 were illiterate it is straining scepticism too far to doubt that this class belongs to the peaks mentioned. No amount of argument about such matters as segregation or poverty can explain away the fact that these have resisted a determined effort not only to put letters within their reach but also to force them to partake. Now, of the 237,000 illiterate persons in Canada, we have already measured or indicated how many are due to race, to age, to rural conditions, to sex and to other factors but the results still leave us in doubt as to how much is class and how much is accident or opportunity. From one point of view the race may be a class; from another it may represent opportunity or lack of it, and similarly in the case of rural conditions. Even in the case of age it may be argued that it is not altogether a question of opportunity; for why should a person be illiterate because he was born fifty years ago if the great majority born then were literate?

When all these points are considered it looks at first as if it were not safe to proceed in the investigation at all; but such an attitude is paralysing. It would probably apply to all research. The wise course would seem to be to continue the investigation, always bearing in mind that generalization must be governed by caution but at the same time not too much scepticism. It is true that there are illiterates who are so to-day by force of circumstances, but even in their case it is not circumstances alone. We know this from the fact that the majority, brought up under the same circumstances, are not illiterate. If, living in outlying parts with only spasmodic school advantages, the majority learn to read, then there must be something different about the person (or his immediate environment) who does not. Even here there is sufficient warrant to designate the illiterate person as a class. We know that even in some large families where the majority learn to read there is apt to be some person who does not. This person may be the genius whom the teacher fails to understand; even so he is *different*. In other words his illiteracy is *individual*, not a collective thing. If a group of individuals fails to learn to read because of religious scruples then this is something different; the scruples may or may not be justifiable—that is not to point—they are different. The reasons for illiteracy may be very, very numerous; indeed, there may be 237,000 or more different reasons for the number of illiterate persons in Canada; but the mere fact that they are only 5 p.c. of the population and that a status of "literacy" can be attained by the average child in about a year, is sufficient ground for regarding these as a class—at least for purposes of investigation.

When we set aside the question of the *causes* or *circumstances* leading to their illiteracy and consider their *behaviour*, then we feel justified in regarding them as a class, especially when this behaviour cannot be associated with loss of knowledge through unfamiliarity with letters. It is difficult to believe that the average literate person's familiarity with letters is sufficient to enable him to philosophize upon prudent and imprudent actions, social and anti-social conduct. If the illiterate person is more apt to assume responsibilities which he is poorly equipped to meet than the average literate person; if his children are more illiterate because even in the midst of an abundance of schools and compulsory attendance laws they fail to attend; if there is more illegitimacy, lower earnings, more wives and children earning and at lower pay, more separated families, more persons in mental institutions and so on than existing among the literates, then behaviouristic evidence certainly justifies considering him as a class.

When dealing with the subject of marriage and fertility, it is especially important whether the illiterates are or are not a class. A person who is crippled or blinded or driven insane, *by accident*, is a far different subject for marriage from a person who is colour-blind or born with six toes or feeble-minded from birth and whose parents or relatives were also so afflicted. The illiterate person who never had access to a school or a book but who nevertheless made a success of life is far different from the illiterate brought up in a city or on a farm with schools close at hand —even if it was his father who kept him at home to work. The child of such a father is apt to be different. The father might be forced to keep him at home at times but why keep him at home *all* the time? Why keep *him* at home? Why should *this* father keep his child at home?

Illiteracy of the Married.—The pertinence of this preamble is seen at once when we make the startling statement that the illiteracy of the married and "at one time married" (as in 1931) was 5·18 p.c. as compared with 2·44 p.c. for the single—both referring to ages 15 and over; *i.e.*, the illiteracy of the married was more than double that of the single. In the case of females the illiteracy of the married was 4·53; and the single 1·51. The first explanation that occurs to one is that this was because the married and widowed were older than the single, but this explanation may be dismissed at once on the evidence of the following statement.

XLVI.—PERCENTAGES ILLITERATE OF THE POPULATION 15 YEARS OF AGE AND OVER, BY CONJUGAL CONDITION, CERTAIN AGE GROUPS AND SEX, WITH YEAR OF BIRTH, CANADA, 1931

Age Group	Percentages Illiterate						Date of Birth
	Both Sexes		Male		Female		
	Married and Widowed	Single	Married and Widowed	Single	Married and Widowed	Single	
15 and over[1]	5·18	2·44	5·83	3·15	4·53	1·51	Before 1917
15-20	3·51	1·49	4·36	1·90	3·41	1·06	1910-1916
21-34	3·20	2·38	3·47	3·03	2·98	1·34	1896-1910
35-64	4·91	4·41	5·43	5·66	4·34	2·51	1866-1896
65 and over	11·28	8·14	12·63	9·97	9·86	6·31	Before 1866

[1] Includes "age not stated".

It will be noticed that the difference between married and single is greatest at the earliest ages and greater in the case of females than in that of males, *i.e.*, greatest where it matters most. Those married at 15-20 must have been very recently married—mostly in the year preceding the census date. Therefore, recent tendencies for the illiterate to marry more than the literate were stronger than earlier tendencies. In the case of those born between Confederation and the beginning of the century the difference was slight—indeed in favour of the married in the case of males. There has been an increasing tendency for the married to be more illiterate since the beginning of the century.

The next suggestion that occurs is that the phenomenon is regional, *i.e.*, that it is confined to a few regions. Table 26, Part II, shows that to the extent (and the extent is small) to which it is regional it is not in the sense of being confined to a few. (The exceptions are in italics.)

Thus in all cases (twenty-nine different regions) except Saint John and Regina, the 15-20's showed far more illiteracy among the married than among the single; in the case of the 21-34's only four places, Prince Edward Island, Nova Scotia, Calgary and Verdun showed more illiteracy among

the single. This is in contradistinction to the other two age groups. The 35-64's showed more illiteracy among the single in eleven cases and the 65 and over's showed this in eight cases. It may be definitely stated, then, that the tendency to show more illiterates among the married is a recent tendency, *i.e.*, it is true first of those marrying very recently and next of those marrying less recently but born since the beginning of the century. Even in Prince Edward Island and Nova Scotia, where in all other cases the married are less illiterate than the single, the general rule holds among the 15-20's. Clearly the phenomenon is not a regional one, because it prevails in almost all the twenty-nine regions.

There is another curious feature of the 15-20's which does not immediately meet the eye. Notice that there is very little correlation between the illiteracy of the married and of the single—one would expect that in the region where the married showed high illiteracy the single would also show more even if they were less illiterate than the married. This is not the case except to a very small extent. The two seem to be separate and independent classes. For example, the married illiterates at 15-20 are much more evenly spread over the twenty-nine regions than the single illiterates of the same ages. This is striking, but there are not sufficient cross-classifications to enable us to ascertain why. It would hardly be safe to conclude from our information that this is because the illiterates have an innate tendency to marry.

The distribution of the females by conjugal condition and illiteracy is obviously more important than that of both sexes. Table 27, Part II, shows the distribution of females 15-20 over the same regions as in the preceding table.

It is seen that the greater illiteracy among married than among single is more manifest in the case of females than in the case of males, ranging from 1·6 times as great in Saskatoon to 24 times in Regina.

It throws an additional light on the matter if the situation is expressed in another way; *e.g.*, in the nine provinces, of the literate females 15 years of age and over, 65·2 p.c. are married compared with 85·2 p.c. of the illiterate. This feature by ages was as follows:—

XLVII.—FEMALES 15 YEARS OF AGE AND OVER, MARRIED OR WIDOWED, AS PERCENTAGE OF NUMBER SINGLE, BY BROAD AGE GROUPS AND LITERACY, WITH YEAR OF BIRTH, CANADA, 1931

Age Group	Number Married or Widowed per 100 Single		Illiterate Rate to Literate Rate	Date of Birth
	Literate	Illiterate		
15–20	8·0	26·6	3·3	1910–1916
21–34	168·5	380·9	2·3	1896–1910
35–64	756·6	1,332·9	1·8	1866–1896
65 and over	789·3	1,282·1	1·6	Before 1866

The last two columns are included to illustrate how the disproportionate illiterates married are decreasing with age or, rather, increasing as the date of birth comes nearer to the present. The remarkably smooth trend of the second last column would seem to indicate that at one time in the past there was no difference in the rates of marriage between the illiterate and literate female but that the tendency to a differential marriage rate has been increasing until now the illiterates are 3·3 times as likely to marry as the literate and that this tendency is apt to increase. If this is so it does not take an alarmist to see that the social problem it suggests is extreme. It does not matter which way it is interpreted—whether that the illiterate marry more or marry younger or that the literate marry less or marry older, its consequences are apt to be the same in the long run and it is the consequences that matter.

Children in Families.—In the family statistics we have the children per family of literate and illiterate parents. These statistics are, of course, somewhat different from the above in that the numbers cannot be exactly the same since they refer to heads of families while the above refer to all married persons. However the differences are too small to stand in the way of comparing the two. The following statement is to some extent a calculation in that it assembles separately the own children of the literate and illiterate females from different types of husband. "Children" here refers to children living at home.

XLVIII.—NUMBER OF MARRIED MOTHERS, TOTAL OWN CHILDREN AND CHILDREN PER MOTHER, BY LITERACY AND CONJUGAL CONDITION OF MOTHER AND LITERACY OF HEAD, CANADA, 1931

Item	Mothers		Own Children of Mothers		Children per Mother	
	Literate	Illiterate	Literate	Illiterate	Literate	Illiterate
Married females	2,015,906	83,868	4,485,932	214,111	2·23	2·55
With—						
Husband literate	1,736,425	32,010	3,950,741	95,002	2·28	2·97
Husband illiterate	49,636	39,034	156,358	97,229	3·15	2·49
Separated	47,739	1,917	87,993	4,126	1·84	2·15
Widowed	182,106	10,907	290,840	17,754	1·60	1·63

Fertility.—The ratio of children living at home of illiterate to literate mothers is 2·55 to 2·23 or 1·14 times as many to the illiterate. Since 85·2 p.c. of the illiterate females are married compared to 65·2 p.c. of the literate, the illiterate would seem to be 1·31 times as likely to be married. If, then, the fertility is in proportion to the number of children living at home, 1·31 x 1·14 = 1·49 to 1·00 would seem to be the comparative fertility of the illiterate to the literate females in the population. It would be interesting to see the consequences of this if it persisted.

There is no possibility that the ratios of increase here shown can continue. Either the tendencies will disappear altogether or, if they persist, the ratios must increase because a greater rate of natural increase among illiterates will change the proportion of females at child-bearing ages to such an extent—making the illiterates' proportion more and more favourable and the literates' less and less—that the differential increase will speed up with accumulating force. In thirty years only a negligible number of the females who in 1931 were 15 or over will be of child-bearing age and the birth rate will be dependent upon their children. In 1931, as already seen, there were 3,257,813 literate and 118,254 illiterate females 15 years of age and over. The present birth rate per female 15 years and over is 7·4 p.c. per year. Suppose this meant 7·26 p.c. among the literate and 11·18 p.c. among the illiterate (*i.e.*, supposing the proportions of 1 to 1·49). In the first year there would be 236,517 births from literate and 13,221 from illiterate mothers. According to the vital statistics of 1931, the number of female births among these would be 114,929 and 6,424, respectively, of whom 113,032 and 6,318, respectively, would be expected to be alive at the age of 15 years, or 111,710 and 6,244 at the age of 20. Without going into meticulously accurate calculations this would mean roughly 674,226 females from literate mothers and 37,686 from illiterate mothers at ages 15-20. If they followed the examples of their mothers there would be 49,893 and 7,914, respectively, of these married. Now notice—in 1931 there were 44,642 literate females married at 15-20 and 1,578 illiterate females or 28 to 1; now it is 49,893 to 7,914 or only 6 to 1—and that in only fifteen years. This does not take into account the possibility—and indeed the probability—that the birth rate to literate females (apart from the influence of age distribution and early marriages) is decreasing. If there were a differential of this kind the speeding up would be much greater than shown.

Now, it is only by a bizarre stretch of the imagination that one can suppose that the situation would be changed by teaching the illiterate females to read and write; or even that the earlier marriages and greater fertility are due to the fact that they cannot read and write. Why suppose this one possibility to be the explanation when there are so many possibilities arising out of the question, "Why is one of these females *not* able to read and write when there are 28 who can?"

Intermarriage.—Another interesting sidelight on the conjugal condition of illiterates is partly deducible from the last statement. This is the tendency to intermarriage among illiterates. Taking the matter from the female side we notice that of 71,044 (belonging to families) whose husbands were living with them at the date of the census, 55 p.c. were married to illiterate husbands and 45 to literate. Now, of the males 15 years of age and over at the census, 4·7 were illiterate and 95·3 were literate, *i.e.*, the females having a choice of 20·3 literate to 1 illiterate male, took the illiterate in 55 out of 100 cases.

Taking the side of the males we have the following figures:—

XLIX.—MARRIED MALES, BY LITERACY AND LITERACY OF WIVES, CANADA, 1931

Literacy of Wife	Married Males			
	Literate		Illiterate	
	No.	P.C.	No.	P.C.
TOTAL	1,768,435	100·00	88,670	100·00
With wife literate	1,736,425	98·19	49,636	55·98
With wife illiterate	32,010	1·81	39,034	44·02

The 71,044 illiterate wives chose 39,034 illiterate husbands out of 88,670 and 32,010 literate husbands out of 1,768,435. Their choice of illiterate to literate husbands was, therefore, 24·3 to 1. The 88,670 illiterate husbands chose 39,034 illiterate wives out of 71,044, and 49,636 literate wives out of 1,786,061. Their choice of illiterate wives, therefore, was 19·8 to 1.

Another way of looking at the matter is as follows: there were, in all, 88,670 illiterate husbands and 71,044 illiterate wives or a total of 159,714 illiterate persons married. Of these illiterate persons 78,068 intermarried, making an intermarriage between illiterates of 48·9 p.c. It should be obvious from the preceding paragraph that this intermarriage is really enormous.

Now there is nothing obvious about the reason for this high rate of intermarriage. It cannot be explained by geographical segregation. It has already been seen in Chapter I and Map I that there is no great geographical segregation of illiterates; they are widespread—probably more widespread in 1931 than in 1921. Unfortunately, a good index of segregation cannot be calculated since illiteracy is not compiled by small areas; but it would seem almost certain that mere physical juxtaposition does not explain all this intermarriage. It is true that there is another kind of segregation, *viz.*, racial, but this after all is class. It is like to like. Whatever it is, it is obvious that illiterates marry illiterates and this is highly significant when we consider the foregoing facts of higher and younger marriage rates and greater fertility.

Conclusion.—Now are there any mitigating circumstances? Is it a mitigating circumstance that, after all, the proportion of illiterates in the population is only very small—one in twenty? It should be obvious from what has already been said about the speed with which the offspring of illiterates could overtake those of the literates, that this is not at all a serious consideration. It is also obvious from the original table showing the higher rates in case of recent marriages than of less recent that it is only as the illiterates came to form a small part of the population that this process became strongly operative. Those resisting the influence of the schools are becoming more and more segregated from the rest of the population (1) by intermarrying; (2) marrying younger and more commonly and having more offspring; (3) keeping these offspring out of school. It would seem that the wisest course for educational authorities to pursue is to recognize the fact and desist from strenuous efforts to make these people go to school who will not go voluntarily. They (the authorities) have done their best in providing the facilities and wearing down illiteracy to the extent to which it has been worn down. If illiteracy is an obstacle to intermarriage between literates and illiterates then nature is providing some protection to the population. This is a mitigating circumstance. It is a treacherous thing to do if we veneer persons with the art of reading and writing in order that they may capture mates when these persons would not go to the trouble of veneering themselves unless they were forced to do so. A mechanical obstacle to marriage is provided by the tendency of illiterates to intermarry. There is no denying the fact that if illiterates have to pick their mates out of 5 p.c. of the population instead of 100 p.c., this provides a certain check. This is capable of being demonstrated from the figures of racial intermarriage.*

*For more complete discussion of this point see 1931 Census Monograph No. 4 *Racial Origins and Nativity of the Canadian People* by W. B. Hurd.

PART II

SCHOOL ATTENDANCE

CHAPTER VI

STATEMENT OF THE PRESENT STATUS OF SCHOOL ATTENDANCE

Introduction.—There are many aspects of school attendance as reported by the census that should be analysed, over and above the features bearing directly upon literacy and illiteracy. One of these is a pure population phenomenon, *viz.*, the rapid increase in the number of persons attending school in the decade. In 1931 the number at ages 5-24 putting in an appearance at school was 2,154,695 as compared with 1,710,581 in 1921. This was a gain of almost 26 p.c. as compared with 18 p.c. in the total population. The increase took place chiefly for two reasons, the first being that the population was more school-minded in the latter part of the decade, the second, that there were greater proportions of the population at school age. There was a third reason of vast social importance, *viz.*, that in the very last year of the decade persons were attending school because there was no work for them to do. Thus the number of persons attending school at the age of 16 increased over 80 p.c. in the decade; at 17 increased 91 p.c., at 18, 93 p.c., or nearly four times as fast as the average and over five times as fast as the population. Persons 16-19 years old at school increased 86 p.c. The increase at these ages recalls another feature of the decade, *viz.*, the Adolescent Act of Ontario which required attendance up to the age of 16, unless the status of university matriculation was reached, or on failure to attend up to 16, part time must be attended at 16 and 17. Similarly other provinces raised the ages of compulsory attendance up to 14 and then to 15. Thus, we find school attendance at 15 increasing over 62 p.c. in the decade and at 14 increasing 34 p.c. The greatest increases took place at 16-18 but much greater than average increases occurred at 14 and 15. The weight of the compulsory attendance and adolescent acts is apparent, but that it was not enough to explain the increase among adolescents is seen in the fact that the age of 18 increased most of all.

In the first place, however, it seems best to give a statement of school attendance as it was in 1931 and consider it in its bearing upon the educational status of the people.

School Attendance in Canada, 1931.—As has been seen, there were 2,154,695 persons between the ages of 5 and 24 who attended school at some period in the 9 months from September 1, 1930, to May 31, 1931. In addition to these, there were 4,766 who attended at some other age or ages making, in all, 2,159,461 or almost 21 p.c. of the total population. Between the ages of 5 and 24 there were about 52 p.c. of the population, between 5 and 19 there were over 65 p.c. and (using age limits more suitable for school statistics) between 7 and 18 there were 75·7 p.c. attending school, *i.e.*, there were only 24·3 out of every 100 persons who were not at school at these ages. If we calculate the average life-time as 60 years and the average number of years at school (from the proportion at school at each age) as 9·89 years, it devolves that almost 16·5 p.c. of a life-time is spent, not exactly at school, for those putting in an appearance at school during the year do not attend regularly, but tied down to the school. If to this is added the proportion at pre-school ages, *viz.*, 10·4 p.c. of the total population, an average of 6·24 years out of the 60, we have 16·13 years out of the number at school or pre-school, *i.e.*, 26·9 p.c. of a life-time. This can be compared with an average of 39 years gainful employment for males and about 8 for women (not counting household duties as "gainful" employment). Since males and females attend school in very nearly the same proportions, we can say that for males 16 years are spent at school or before school, 39 years in employment and 5 years in idleness (in old age). The 39 years of male employment and the 8 of female have to support 21 years of male and 52 years of female dependency besides supporting themselves concurrently, *i.e.*, assuming the sexes to be equal numerically, 47 years of employment (without allowing for the deductions that have to be made for irregular employment) have to support 73 years of unemployment. This gives a concept of the important part the school plays in a life-time. Assuming, as before, that the sexes are numerically equal and that they attend school for the same period—and it will be seen later that this is not far wrong—we have 19·8 years of school life against 47 years of employment in gainful occupations. The question arises as to whether these school years are merely a preparation for the employment years or

for something else in addition. If they are merely a preparation for employment, then the expense of preparation is appalling. In any case, it is clear that these school years must not be wasted. Now, there is one form of waste that is immediately discernible. The years mentioned are those during which the person is in contact with the school. If the attendance during that period is not full time, then whatever it comes short of full time is wasted. In the Census of 1931 the attendance was taken by months at school during the year from September 1 to May 31, so that 9 months was the largest number possible. To the extent that the person attended less than this period the time might be regarded as wasted. The full force of this will be seen later.

A more thorough analysis of the progress in school attendance during the last thirty years will be made in Chapter VII but here, following up the idea of the time spent at school, the average in each of the three periods was as follows:—

1931	9·89 years
1921	9·13 "
1911	7·96 "

It will be seen from these figures that the person in 1931 spent, on an average, 0·76 years more of his life-time tied down to the school than in 1921 and 1·93 years more than in 1911. Thus the period of training for whatever it may be is lengthening out—if for employment, then life must be growing progressively more difficult; if for cultural needs, then life must be growing progressively fuller. It is no argument against this conclusion that the reason for the lengthening out is not that every individual increased by this much; rather, it is due to the fact that some persons remained at school no longer than before but that more persons stayed a long time at school and fewer persons stayed only a year at school. The results are the same in the long run. The population is considered *en masse*, so that this lengthening out of the period at school is quite genuine. There is much evidence to show that this prolongation is not all due to a necessity for, but that part of it is due to scarcity of, employment; for many are staying at school beyond normal time because they have nothing else to do. How this will react on future employment remains to be seen. If additional years at school mean additional education, then it will follow that the gainfully occupied of the future will be better trained than those of the past; but if there are certain limits beyond which education cannot go in the case of certain individuals, then these additional years at school are wasted. A very careful assessment should be made of the additional education that is received in return for these additional years.

Ages at School.—For a more complete understanding of the manner in which the averages above quoted were built up, Table 28, Part II, shows, by single years and sex, the attendance in 1931 and 1921. This describes the school career as follows: a decreasing proportion begin school at the age of 5 years as is shown by the fact that in 1931 there were 11·29 p.c. at this age at school as compared with 14·06 p.c. in 1921. Experience seems to show that there is no great gain in sending children to school too young. Their school career is long enough as it is without sending them there at an age too young to benefit by it while their health undoubtedly suffers. The proportions increase from the age of 6 up to the age of 11 after which they decrease, at first slowly and then rapidly from the age of 13 on. However, 2·83 p.c. of the population 20-24 are still at school. Most of these are in training for higher education. The highest point reached is 97·18 p.c. at 11 years of age. It might be as well to point out here, to avoid any misunderstanding of the fact that the highest percentage attending school at any period during the school career is 97·18 p.c. of the population at that age, that this does not necessarily mean that 2·82 p.c. never attend school. Some may be absent at 11 years who either had attended at an earlier age or began school at a later age. We know from the figures of illiteracy that at ages 10-14 the percentage illiterate was 1·12, so that at least 98·88 p.c. must have attended school at some period before the age of 15, even if illiteracy is considered the same as never having attended school. In spite of the fact that some children learn to read before beginning school, it is quite safe to assume that the percentage of the population at 10-14 who have ever attended school is larger than the percentage who have learned to read. For one thing, those who learn to read out of school are more apt to go to school later than those who do not learn because, except in cases of population in isolated areas, they are apt to be the brightest children. The largest proportion that never go to school should be put at less than 1 p.c. or, conversely, at least 99 p.c. of the present population of school age put in an appearance at school at some time, although some of these do not begin until after the age of 11. In a very large sample of pupils by age and school grade it is found that over 1 p.c. are in the first school grade at ages 12 and over.

Table 28 shows marked contrasts between 1921 and 1931, which will be treated more fully in Chapter VII. It is clear, of course, that in both years the largest proportions were attending school at the ages of 10 and 11, but in 1921 the proportions increased very rapidly from the age of 6 to this point and dropped very rapidly after this point; in 1931 both the approach and recession were much less rapid, indicating that fewer stragglers were coming in late and fewer leaving early. This will be seen more clearly if we express the percentages at school in both years as indices with the age of 11 as base as follows:—

L.—INDICES OF PERCENTAGES AT SCHOOL WITH AGE 11 AS BASE AND DIFFERENCES BETWEEN SUCCESSIVE AGES, CANADA, 1931 AND 1921

Age	Index		Differences between Successive Ages		Age	Index		Differences between Successive Ages	
	1931	1921	1931	1921		1931	1921	1931	1921
7	89·5	86·9	7·7	9·2	14	85·7	77·8	9·8	15·6
8	97·2	96·1	1·7	2·6	15	68·6	54·4	17·1	23·4
9	98·9	98·7	1·0	1·1	16	47·3	34·6	21·3	19·8
10	99·9	99·8	0·1	0·2	17	29·3	20·8	18·0	13·8
11	100·0	100·0	–	–	18	17·1	11·9	12·2	8·9
12	98·9	98·3	1·1	1·7	19	9·9	7·3	7·2	4·6
13	95·5	93·4	3·4	4·9	20-24	2·9	2·4	7·0	4·9

With this arrangement of the data it is clearly seen that (1) the indices were higher in 1931 than in 1921, *i.e.*, at all stages the proportions at other ages were nearer those at the maximum age 11; (2) up to the age of 16 the difference between the proportions at one age and another were less in 1931 than in 1921 but after this age they were greater. This, of course, was the natural thing to happen. The main body of the population would be expected to complete their education before the age of 16, *i.e.*, if all had attended regularly since beginning school they would have reached a standing equal to that which any compulsory education act (except Adolescent Acts) usually expects. If it were not for upper high school grades and university work they would all be expected to drop out at this age. The great difference between the two years is that up to the limits of the Compulsory Education Acts they remained much more steadily at school, and the force of these Compulsory Acts is traceable in the fact that they dropped more rapidly after this age. Without arrangement as above, it would be difficult to see this owing to the fact that the proportions were higher throughout in 1931. The influence of the Compulsory Act is particularly noticeable because the age at which they begin to drop more rapidly (15) is not a particular stage in school life, *i.e.*, it is not a stage at which either high school entrance or university matriculation is reached. In 1921 they dropped rapidly between 13 and 14. This would correspond to the high school entrance stage. Not so in 1931. There is evidence that at the age of 13, pupils were further advanced in 1931 than in 1921 and yet they did not drop out as in the earlier year; nor did they wait till the age of 16 or 17 was reached when they would be expected to have completed the high school course. They simply obeyed the letter of the law. This is an important idea. The effects of the law seem to have been to wipe out the old well-defined lines of demarcation in the school career as these stages were recognized in most of Canada and the United States and to bring them closer to the stages as marked in the United Kingdom, Continental Europe and the Roman Catholic schools of Quebec. In these we have the elementary school after which there are two branches—the continuation and the secondary school. In Canada and the United States there are just two—the elementary and the high school.

Regularity of Attendance.—It has just been pointed out that, on an average, 9·89 years are spent at school but this merely meant that during this time the person was tied down to school. If he did not attend the full year, he was still associated with the school for a year but wasted the part that he did not attend. With very few exceptional cases this is true. It will be seen later that irregularity of attendance during time at school has as one of its results the necessity for staying longer at school. The question asked by the enumerator was "months at school since September 1", *i.e.*, up to June 1. Table 29, Part II, gives the compilation on the answer to this question for the nine provinces, rural and urban, and for the ages 5-19, the same data being shown for 1921 as well.

Taking the conditions of 1931, it is seen that 94·62 p.c. of all the pupils going to school attended from 7-9 months out of a possible 9 months (from September to May, the period about which the census enumerator asked); 3·19 p.c. attended from 4 to 6 months and 2·19 attended less than 4 months, the average number of months apparently being about 7·8 out of 9 or, say, 87 p.c. of the possible time. If the full school year is put at 200 days and this percentage is representative it means that pupils on an average attended 174 days. It is important to mention this since we have the same facts measured, but from a different point of view, by the teachers' returns. The census measures the attendance of all persons living in Canada on June 1, 1931; the teachers' returns show the attendance of pupils coming in and out throughout the year and include a floating population some of whom are dead and others who have left the country before June 1, while still others may have begun school between June 1 and the end of the school year.

Added to this is the fact that the census figures show the attendance at all sorts of schools, including private schools, etc., while the teachers' reports in which we have records of duration of attendance are only for ordinary day schools. Further, the teachers' reports are carefully kept records in which day by day attendance is marked, while at the census, the person attending depends upon his memory and gives the attendance in months instead of days. Thus, if the person attended at any time during a certain month but not every day throughout that month, he would be apt to count that month as a month's attendance. Then, again, it is possible that children went to school in another province or country from their province of residence at the census date. The two reports, therefore, do not necessarily tell the same story and yet there is a rough approximation to the same story in what they actually report.

There is one other reason why the two figures should be different. The teachers' reports record any pupil who is registered during the school year beginning at some time in August and ending the last of June. Consequently, any pupil who began school late, after the opening in August or in June (in the case of children just coming of school age), would pull the percentage of attendance down. On the other hand, the census reports data only for the school attendance from September 1 to May 31.

Bearing in mind all the reasons for differences in the percentages in daily attendance between the two sources of information, we have the following comparative percentages in daily average attendance as reported by the census for population 5-19 and by teachers' records for publicly-controlled schools.

LI.—PERCENTAGES IN AVERAGE DAILY ATTENDANCE AT SCHOOL ACCORDING TO TEACHERS' AND CENSUS REPORTS, WITH THE DIFFERENCE BETWEEN THE TWO, CANADA, BY PROVINCES, 1931

Province	Percentage in Average Daily Attendance		
	Teachers' Reports	Census Reports	Difference
Prince Edward Island	72·7	83·7	11·0
Nova Scotia	72·7	85·4	12·7
New Brunswick	77·3	84·8	7·5
Quebec	83·0	86·6	3·6
Ontario	77·3	86·9	9·6
Manitoba	78·6	86·2	7·6
Saskatchewan	76·7	84·9	8·2
Alberta	81·0	86·6	5·6
British Columbia	87·2	87·2	-

Now one alone of the reasons given, *viz.*, the fact that so many "months at school" as reported in the census did not necessarily mean full months but merely an appearance at school, would be more than enough to account for the differences shown in the last column. The teachers' records being in all cases lower than the census proves conclusively that the causes mentioned entered into the differences.

Taking the census figures as one side of the truth, *viz.*, the attendance of those who were resident in the province on June 1, 1931 and taking 9 months as the possible year, the following percentages compare rural and urban average daily attendance

LII.—PERCENTAGES OF THE SCHOOL POPULATION 5-19 YEARS OF AGE IN AVERAGE DAILY ATTENDANCE, RURAL AND URBAN, CANADA AND PROVINCES, 1931

Province	Percentage in Average Daily Attendance		Province	Percentage in Average Daily Attendance	
	Rural	Urban		Rural	Urban
CANADA	84·9	87·7	Ontario	85·6	87·7
			Manitoba	85·1	87·6
Prince Edward Island	82·7	86·9	Saskatchewan	83·6	87·8
Nova Scotia	83·6	87·5	Alberta	85·5	88·3
New Brunswick	83·3	88·2	British Columbia	86·8	87·5
Quebec	85·0	87·6			

It is rather strange that the differences between rural and urban in the matter of regularity of attendance are so small considering that the differences are so large when it is a question of putting in an appearance at school during the year. One would have expected the opposite. It is not difficult under rural conditions to go to school some time during the year, but it is difficult to attend steadily the whole school year. And yet we have in the nine provinces a difference of only 2·8 p.c. between rural and urban attendance when it comes to regularity and one of over 8 p.c. when it comes to putting in an appearance. The above figures deal with persons 5-19 years of age, so that the chief reason for the non-appearance at school of rural persons is likely the earlier dropping out of school.

Using these data on months at school in conjunction with the ages of the pupils, we can estimate the number of years in actual attendance at school in the life-time of the pupil as compared with the number of years tied down to the school as follows:—

Year	Years Tied Down to the School	Years' Schooling (actual record)	Difference
1931	9·89	8·55	1·34
1921	9·13	7·58	1·55
1911	7·96	6·58	1·38

Thus, under the conditions of 1931, out of 9·89 years tied down to the school 1·34 years were wasted through irregularity in attendance. If a child began school at the age of 7 and attended full time, he would have completed average schooling at age 15·55; but through not attending full time he does not complete it till age 16·89. Roughly, the same conditions hold for 1921 and 1911. That this is actually the result can be seen from an illustration which shows the attendance of the Canadian, British and foreign born. The attendance for these three classes is shown in Table 30. Since only ages 5-19 are used, the calculations for the three classes will be different from those shown above where ages 5-24 were used.

Nativity and School Attendance.—There are certain striking points of difference between the three classes. The British and foreign show smaller percentages attending school if we take the age limits as 5-19, but the British born show much fuller attendance at 5-9 than either of the other two, while both the British and foreign attend more fully than the Canadians at 10-14. It is at ages 15-19 that the Canadian born attendance is superior, *i.e.*, the Canadian born stay longer at school, while the British born begin school younger, which may be one reason why they leave school earlier. When we come to regularity of attendance as measured by months at school the three classes compare as follows:—

Nativity	Average months at school during year
Canadian born	7·77
British born	7·83
Foreign born	7·70

Here the British born attend more regularly during the year than the other two classes. This if the year 1930-31 may be taken as a sample of the school career, would help to explain

why the British born leave school earlier. If, further, we regard the year as a sample, a rough measurement can be made of the total time at school of the three classes as follows:—

LIII.—AVERAGE NUMBER OF MONTHS AT SCHOOL AND PERCENTAGES ATTENDING SCHOOL OF THE POPULATION 5-19 YEARS OF AGE, BY NATIVITY AND AGE GROUP, CANADA, 1931

Item	Canadian Born	British Born	Foreign Born
Average months at school of the population at ages—			
5- 9	7·60	7·68	7·51
10-14	7·89	7·91	7·83
15-19	7·84	7·81	7·75
Percentages at school of the population at ages—			
5- 9	68·60	78·78	66·21
10-14	93·30	96·37	94·41
15-19	34·65	21·11	26·82

Thus the British born, in spite of the fact that they dropped out of school earlier than the Canadian born, apparently put in as much time at school throughout their school career owing to an earlier start and more regular attendance while at school. The foreign born apparently are behind the other two classes by about four months.

This now corroborates the earlier statement that one of the penalties of irregularity of attendance is having to stay longer at school. There is plenty of evidence from the data on grade at school that the standing reached is directly proportional to the time spent *in* school (not *at* school). The British born, then, may be expected to have reached the same standing as the Canadian born although tied down to the school a shorter period. They straggle less at the beginning, attend better while at school and leave earlier. If this is true in this case, it is very likely to be true in others and goes to show that the time spent "at school" over and above the time actually attended is waste. Now one and one-third years of this waste is three and one-third per cent of the time allotted for employment out of a lifetime and, consequently, increases the burden of the employed to this extent.

School Attendance by Provinces.—The percentage of the population at school between the limits of school age is roughly proportional to the time at school during life-time. If the 1931 figures are taken as a sample of conditions from the time the child begins school until the age of 19, the percentage at school in 1931 multiplied by 15 would be, roughly, the number of years at school between these ages. Thus, in the nine provinces, 65·67 p.c. of the population 5-19 were at school in 1931. Multiplying this by 15 would be 9·85 years. That this is not strictly true is due to varying numbers at different ages and the fact that there has been a steady lengthening out over the last fifteen years in time at school. The 9·85 is a rough estimate which will enable us to see that the percentage at school at these ages is proportional to the total time spent at school. In the following statement three facts are shown for the provinces: (1) the percentage of the total population that is found at ages 5-19; (2) the percentage of persons 5-19 at school and (3) the percentage of the total population at school. The last percentage is merely to show how the school population compares with the remainder. Thus, in the nine provinces 20·81 p.c. were persons 5-19 at school, leaving 79·19 p.c. out of school or, roughly, a proportion of 1 to 4.

LIV.—PERCENTAGES OF TOTAL POPULATION 5-19 YEARS OF AGE, PERCENTAGES 5-19 YEARS OF AGE AT SCHOOL AND PERCENTAGES OF THE TOTAL POPULATION AT SCHOOL, CANADA AND PROVINCES, 1931

Province	Percentage		
	5-19 of Population at All Ages	At School of Population	
		5-19	All Ages
CANADA	31·29	65·67	20·81
Prince Edward Island	31·65	64·58	20·73
Nova Scotia	32·56	67·97	22·43
New Brunswick	34·28	62·95	21·85
Quebec	33·73	60·04	20·48
Ontario	28·26	69·63	20·04
Manitoba	32·74	66·58	22·10
Saskatchewan	34·96	66·41	23·46
Alberta	32·09	68·04	22·11
British Columbia	26·12	69·13	18·32

In examining these percentages at school, it is apparent that the relationship between the percentage at school age and the number attending school tends, if anything, to be an inverse one. The best attendance is not reached where the proportion of children 5-19 is greatest. Therefore, a larger proportion of children at school age does not necessarily mean a correspondingly large proportion at school. We cannot definitely assume this as true when nine cases only are considered. The possibility is merely mentioned here, as the matter of age distribution and its influence will be dealt with in greater detail in a later chapter. If it is true, it is a problem the rural municipalities must face, for they have the largest percentage of children at school age.

The province which has the highest percentage of the total population at ages 5-19 is Manitoba and the lowest, British Columbia. The reason why Quebec and Alberta are not the highest is because of a large pre-school age (under 5) population, while the reason for Ontario's position is an older population. British Columbia has the smallest proportion because of a large adult population due to the fact that the majority of her population has been recruited from the other provinces and by immigration. Manitoba seems to be a mean in all these respects and so has the highest, Saskatchewan coming a close second.

In the matter of provincial comparison as to time spent at school, it has already been pointed out that the "percentage of the population at school" furnishes a rough guide. A more careful calculation, not only of the length of school life but also of the differences between this and the part of it that was actually used by regularity of attendance, shows the following figures:—

LV.—ESTIMATED NUMBER OF YEARS SPENT "AT SCHOOL" AND IN ACTUAL ATTENDANCE BY THE POPULATION 5-24 YEARS OF AGE, WITH THE DIFFERENCE BETWEEN THE TWO, CANADA AND PROVINCES, 1931

Province	Estimated Years		
	Spent at School	In Actual Attendance	Time Lost (difference)
CANADA	9·89	8·55	1·34
Prince Edward Island	9·71	8·12	1·59
Nova Scotia	10·22	8·73	1·49
New Brunswick	9·39	7·96	1·43
Quebec	8·98	7·78	1·20
Ontario	10·60	9·20	1·40
Manitoba	10·07	8·68	1·39
Saskatchewan	9·88	8·39	1·49
Alberta	10·18	8·82	1·36
British Columbia	10·50	9·15	1·35

It is striking that the figures in the last column are so nearly uniform for the provinces, Quebec being the only marked exception, *i.e.*, the school children of Quebec lose less time than those in any other province to the extent that it pulls the Dominion average below those of all the other provinces. This, of course, is very creditable. School life in Quebec is the shortest, but it goes some way to make up for this by more regular attendance. The reason that the school life is shortest is that fewer persons go on to secondary education due largely to the educational system. "Secondary education" in Quebec is as yet a selection of personnel; in the other provinces it is regarded as the right of everyone. Continuation work in Quebec is not considered secondary education; it is merely "complementary" or "supplementary" to elementary education. This is in line with the resemblance of the Quebec Roman Catholic system to European systems. Already it has been pointed out that, in fact though not in name, one of the aspects of the changes that have taken place throughout Canada in educational progress is an attraction in this direction. The ages at which pupils are now dropping out of school in large numbers correspond to the ages when complementary education can be completed—at, say, the stage of Grade X, in high school work, or Ontario second year "Lower School". Taking the totals in high school grades in the nine provinces (excluding the Roman Catholic schools of Quebec) and comparing the 1931 figures with the earliest of which we have a complete record, the numbers in the Entrance Class and the high school grades were as follows:—

LVI.—NUMBER AND PERCENTAGES IN GRADES VIII-XII (EXCLUSIVE OF THE ROMAN CATHOLIC SCHOOLS OF QUEBEC), CANADA, 1927, 1931 AND 1933

Grade	No. in Grade			P.C. in Grade		
	1927	1931	1933	1927	1931	1933
Total	292,932	339,759	386,684	100·00	100·00	100·00
VIII	120,390	126,000	130,845	41·09	37·09	33·84
IX	75,761	86,335	95,281	25·86	25·41	24·64
X	48,765	63,014	71,664	16·65	18·55	18·53
XI	38,568	49,952	64,415	13·17	14·70	16·66
XII	9,448	14,458	24,479	3·23	4·25	6·33

Thus, the relative proportions in both Grades VIII and IX decreased even in the short period of six years, while the drop between Grades X and XI was greater in 1931 than in 1927; Grade X was more, and Grade IX less, of a stepping-off place in 1931 than in 1927. The process would be more clearly seen if an earlier year than 1927 could have been used. The median grade in 1933 was almost Grade X but the marked change between 1931 and 1933 was in the upper high school grades. This change, however, can hardly be regarded as typical since it was complicated by the depression in holding older pupils at school.

CHAPTER VII

EXTENT AND DIRECTION OF CHANGES IN SCHOOL ATTENDANCE DURING THE CENTURY

Introduction.—In the preceding chapter certain changes which took place in school attendance during the last decade have been mentioned more particularly for the purpose of clarifying the significance of the actual status in 1931. The change was in the direction of both prolonged school life and of increased time actually spent in school—two different concepts, be it noticed. The lengthening out of school life merely means that the child is being tied down longer to the school whether profitably or not; the putting in of more time at school means that within the limits of that school life the child attends more regularly and, consequently, is expected to derive more benefit from the school life. The difference between the two is here regarded as a waste. In Chapter VI, this waste (for the nine provinces) was measured as being 1·34 years between the ages of 5 and 24; the average school life was put at 9·89 years and the average time spent in school at 8·55 years.

Parents really interested in their children will readily grasp the significance of these figures. To reach the same status as the average child with the same regularity of attendance as the average child, these parents have to send their children to school for 10 years during which the children put in actually $8\frac{1}{2}$ years of schooling. Since causes such as sickness, etc., over which the parents have little control may intervene, it is impossible for those parents, however dutiful they may be, to predict that with care they can control the situation so that the child may go to school only $8\frac{1}{2}$ years instead of 10. In the meantime the child is tied down for 10 years to a rigid routine of attendance and probably homework, which interferes with any cultural training with which the parent may wish to supplement the school program and which the school does not furnish. The greatest hardship, however, is connected with the health, present and future, of the child. While systems of health inspection and physical training carried out by the school may help to mitigate these dangers they can no more than mitigate—they cannot avoid them. The child thrown in with other children is forever subject to epidemic diseases, injuries arising from sedentary position or inadequate lighting and all sorts of injuries that may arise from confinement and even play. All these dangers are incurred in return for that school standing mentioned plus or minus certain imponderable or immeasurable advantages which may be called training apart from that obtained from books. This training may take the form of physical, mental and moral discipline. It stands to reason that the one who gains most in this respect is apt to be the child from an indifferent home; the child from the best type of home gaining the least, if not actually losing from bad contacts.

Now, this is the situation and, being what it is, it is necessary for the parents and for the State, especially since the latter takes upon itself the responsibility of enforcing attendance, to weigh matters very carefully. Before we regard changes as improvements we have first to find out whether they *are* improvements. Consequently, it is necessary before reviewing the changes to weigh certain facts and arrive at criteria.

Age at Which School Life Should Begin.—The first thing for the parent to consider is when the child should begin school. Assuming, again, that he is an average child, can he, by beginning at 5, finish at the age of 15 instead of 17? If it is true that the child can finish at 15 instead of 17, this is a great gain, but even at 15 the period of childhood is over, while the attendance at the very tender ages of 5 and 6 robs him of two carefree years of childhood. Especially at the present time when employment is so difficult to obtain, the exchange is decidedly a poor one, even if the same work could be accomplished between 5 and 15 that can be accomplished between 7 and 17, but can it? Here, again, we have to assume that the parent has not complete control of regularity and that the chief reasons for irregularity are such matters as illness, changing residence, etc., which are the parents' misfortune rather than their fault.

Measuring from one standpoint only, *viz.*, the probability of attendance, we have the following figures:—

LVII.—PERCENTAGES OF THE POPULATION 5-24 YEARS OF AGE AT SCHOOL AND AVERAGE NUMBER OF MONTHS SPENT AT SCHOOL IN YEAR, BY SINGLE YEARS OF AGE, CANADA, 1931

Age	P.C. of Population at School	Average Months at School in Year	Age	P.C. of Population at School	Average Months at School in Year
5-24	51·89	7·77	12	96·12	7·89
			13	92·77	7·88
5	11·29	6·01	14	83·33	7·86
6	53·13	6·90	15	66·67	7·84
7	86·97	7·64	16	45·98	7·80
8	94·45	7·84	17	28·49	7·84
9	96·15	7·88	18	16·62	7·82
10	97·09	7·90	19	9·63	7·78
11	97·18	7·90	20-24	2·83	7·77

Value of Time Spent at School under Age 7.—The child that attends every year from ages 5 to 15 inclusive puts in 83·54 months (out of 99 possible months), from 6 to 16 puts in 85·33 months, and from 7 to 17 puts in 86·27 months, *i.e.*, the child attending from 7 to 17 puts in 2·73 months more than the child attending from 5 to 15. This is at least a quarter of a year. Now, whatever may be said of ability tests, it is well established that there is such a thing as mental age and that up to the age of 16 the mental age increases. According to this the number of mental years from 7 to 17 is 1·2 times as great as between 5 and 15. Using mental years, the time spent at school by the 7-17-year-olds compares with that by the 5-15's as 83·54 to 100·25, *i.e.*, through the combined influence of regularity and mental age the 7-17's put in 16·71 months or about a year and two-thirds more than the 5-15's. This is more than the attendance of the 5- and 6-year-olds combined. Clearly, then, the years put in at school before 7 are wasted and a dead loss to childhood unless there are other considerations. A consideration which is apt to intervene is the barrier to progress consistent with mental age, frequently set up by the state. Such a barrier is the tendency to keep pupils down to a grade a year, or to make all pupils march in step unless they fail, *i.e.*, a child may fail in his grade and lose a further year but it is difficult and in most cases impossible for him to *gain* more than one grade a year. This is a characteristic of the graded school, not of the rural ungraded school. The gain in regularity of attendance in urban over rural schools is, therefore, apt to be offset in this way. Considering the importance of the matter, the state is absolutely blameworthy in so far as it allows or compels this sort of thing to go on. The loss of time in school is no light matter, nor is the loss of childhood. On the other hand, the parent who sends the child to school too young and keeps him there irregularly through any carelessness is culpable.

Evaluation of Changes in School Attendance.—With this foreword, it will now be possible to see whether the changes that have taken place during the century have been in the direction of improvement. Table 31, Part II, compares the years 1911, 1921 and 1931, in the average number of years spent at school and the average number of years of schooling received on the basis of regularity of attendance. The full school year is taken as 10 months and the figures have been calculated on the basis of the attendance at each age in the year of the census.

It is quite evident that striking changes have taken place. Taking first the case of the nine provinces combined, we have the following:—

LVIII.—AVERAGE NUMBER OF YEARS "AT SCHOOL" AND IN ACTUAL ATTENDANCE, WITH THE DIFFERENCE BETWEEN THE TWO, BY AGE GROUPS, CANADA, 1911-1931

Item	1911	1921	1931
	years	years	years
Time "at school", 5-24 years	7·96	9·13	9·89
Time in actual attendance, 5-24 years	6·58	7·58	8·55
Difference	1·38	1·55	1·34
Time "at school", 5-6 years	0·58	0·67	0·64
Time in actual attendance, 5-6 years	0·42	0·47	0·48
Difference	0·16	0·20	0·16
Time "at school", 7-14 years	6·38	7·12	7·44
Time in actual attendance, 7-14 years	5·34	5·98	6·49
Difference	1·04	1·14	0·95

LVIII.—AVERAGE NUMBER OF YEARS "AT SCHOOL" AND IN ACTUAL ATTENDANCE, WITH THE DIFFERENCE BETWEEN THE TWO, BY AGE GROUPS, CANADA, 1911-1931—Con.

Item	1911	1921	1931
	years	years	years
Time "at school", 15-17 years	0·81	1·04	1·41
Time in actual attendance, 15-17 years	0·67	0·88	1·23
Difference	0·14	0·16	0·18
Time "at school", 18-24 years	0·19	0·30	0·40
Time in actual attendance, 18-24 years	0·15	0·25	0·35
Difference	0·04	0·05	0·05

It is apparent from these figures that there are three ways of lengthening out school life: (1) by beginning at a younger age; (2) by remaining to an older age; (3) by avoiding breaks between, whereby a year now and then is missed. This third is different from what has been termed "irregularity" of attendance, which means that within a school year the pupil misses a day or a week here and there and thus loses the benefit of a full year's attendance. Manifestly, some children stay out of school a whole year or even more at a time within the period from the beginning to the end of school life. This phenomenon is difficult to understand, but it is apparent from the figures and is at least partly due to a child's not beginning school till past the natural age for beginning. Thus, between the ages of 7 and 14, there are 8 years but, on the average, children appeared at school only 7·44 years during which they put in 6·49 full years' attendance. Thus there was taken out of the school life 0·56 years (8—7·44) for *all* pupils, which really means a year or more for a large number of pupils while the rest attended continuously. This probably is the worst kind of waste, for the child who attends irregularly within the school year is likely to keep up some kind of contact with the class work, but the one who stays away a whole year or more is likely to lose the benefit of the education and training he has so far received.

Now in the case of all age groups the school life has been lengthening out considerably. For all ages it has lengthened out 1·93 years since 1911. It is interesting to see how this increased length of 1·93 years has been accomplished. Between 5 and 6, an increase of 0·06 years took place, meaning that more persons attended between 5 and 6, but at these ages there was a decrease between 1921 and 1931. It would seem that the practice of sending children to school at the very early ages is tending to die out and this is so much to the good. The lengthening out, then, has not taken place at the beginning of school life. Between the ages of 7 and 14 the school life has lengthened 1·06 years. This means that the practice of staying out of school a whole year or more between these ages, either by beginning school late, leaving before 14, or staying out a year after beginning school and before finally leaving, is disappearing. The improvement in this respect has been very considerable and there is not the least doubt that it has been a genuine improvement, for a gain of 1 year in 8 between these ages is a large proportion and certainly saves time at both beginning and end. The recognition of the practice of losing time within school life is to be seen in the Adolescent Act of Ontario, which calls for part time attendance at older ages for those who did not remain at school full time up to the limits set by the Act. Between the ages of 15 and 17 the school life lengthened by 0·60 years. This, undoubtedly, means staying at school to older ages. Between 18 and 24 the school life lengthened by 0·21 years. This has to do with more persons going in for higher education. A summary of the manner in which the increased length of 1·93 years in school life took place between 1911 and 1931 is as follows:—

at ages	5- 6	0·06 years
"	7-14	1·06 "
"	15-17	0·60 "
"	18-24	0·21 "
"	5-24	1·93 "

Seeing the increases together like this enables us to assess them properly. The one undoubted improvement is the 1·06 years between the ages 7 and 14; the remaining 0·87 years, which is a lengthening out of school life at the end, may or may not be such. Certainly the 0·06 at the ages 5 and 6 is no improvement. The 0·81 after the age of 14 may be to the extent that it is in quest of higher school standing. Table 31 enables us to investigate this point further.

When we come to compare the years actually spent in school, *i.e.*, full time at school, with the years tied down to the school we have a difference in 1931 of 1·34 years which may be regarded as wasted. In Chapter VI, the comparison between the British born and the other classes showed

that while the British born left school earlier, they put in, in actual attendance during their shorter school life, almost as much time as the Canadian born. The waste of 1·34 years in 1931 occurred at the various ages as follows:—

at ages	5- 6	0·16 years
"	7-14	0·95 "
"	15-17	0·18 "
"	18-24	0·05 "
"	5-24	1·34 "

Thus, there was a waste of 0·95 years at ages 7-14 which had to be made up after this age to bring the standing up to that of the average child. It is true that this waste was less than at the two previous censuses but it was a complete waste none the less. The comparison between censuses in the matter of this waste was as follows:—

		1911	1921	1931
at ages	5- 6	0·16	0·20	0·16
"	7-14	1·04	1·14	0·95
"	15-17	0·14	0·16	0·18
"	18-24	0·04	0·05	0·05
"	5-24	1·38	1·55	1·34

The elimination of waste, if taking place at all, is going on very slowly. It is true that, in proportion to the length of school life, it is growing smaller but is this the correct angle from which to view it? A waste of 1·34 years is taking place in the school life owing to irregular attendance, 1·11 years of which occurs before the age of 15 and has to be made up later to attain the standing of the average child, no matter to what it is in proportion. It is also true that the time actually spent in school by the average child has increased from 6·58 years in 1911 to 8·55 years in 1931, or 1·97 years, but this was at a cost of lengthening school life from 7·96 years in 1911 to 9·89 years in 1931 or by 1·93 years. This was a heavy price and the only good feature of it is that 1·06 of these 1·93 years took place between the ages of 7 and 14. The difference between 1·93 and 1·06 or 0·87 years was an undisputed extra cost to gain the 1·97 years of standing, *i.e.*, the increase in school standing in the twenty years was at the expense of lengthening the school life at the two ends by 0·87 years, and this was by no means to the good. Had it not been for the waste this lengthening could have been avoided. Thus, a child beginning at 7, putting in full time and leaving at 15·55, could have reached the same standing as the actual case of the child beginning at 7 and, because he did not put in full time, leaving at 16·89. Or, if we consider the time lost because of not being at school at ages 7-14, these children, by remaining at school and putting in full time, would have put in 8 years in this time so that they would only have to stay half a year more to reach the standing of the average. The difference between 16·89 and 14·55 or 2·34 years may be considered a waste, unless the children who stay out of school for a year or more within school age are being educated through travel or otherwise.

Provincial Distribution of Improvement.—Comparing only 1911 and 1931 in the matter of improvement and waste we have the following distribution:—

LIX.—ESTIMATED LENGTH OF SCHOOL LIFE AND TIME SPENT IN ACTUAL ATTENDANCE, WITH THE DIFFERENCE BETWEEN THE TWO AND INCREASE IN EACH DURING THE PERIOD, CANADA AND PROVINCES, 1931 AND 1911

Province	1931			1911			Increase in 20-Year Period	
	Estimated Length of School Life	Estimated Time Spent in Actual Attendance	Difference	Estimated Length of School Life	Estimated Time Spent in Actual Attendance	Difference	Length of School Life	Time Spent in Actual Attendance
	years	years	years	years	years	years	years	years
CANADA	9·89	8·55	1·34	7·96	6·58	1·38	1·93	1·97
Prince Edward Island	9·71	8·12	1·59	8·46	6·71	1·75	1·25	1·41
Nova Scotia	10·22	8·73	1·49	8·50	6·83	1·67	1·72	1·90
New Brunswick	9·39	7·96	1·43	8·07	6·46	1·61	1·32	1·50
Quebec	8·98	7·78	1·20	7·89	6·77	1·12	1·09	1·01
Ontario	10·60	9·20	1·40	8·50	7·00	1·50	2·10	2·20
Manitoba	10·07	8·68	1·39	7·60	6·15	1·45	2·47	2·53
Saskatchewan	9·88	8·39	1·49	6·62	4·96	1·66	3·26	3·43
Alberta	10·18	8·82	1·36	6·46	4·92	1·54	3·72	3·90
British Columbia	10·50	9·15	1·35	7·55	6·32	1·23	2·95	2·83

The last two columns are the most significant. In nearly all the provinces the improvement in the length of schooling received was a trifle greater than the increased length of school life, but it may be said that practically all the improvement was at the cost of prolonging the school life. As has already been pointed out, where this lengthening out of the school life took place within the limits of school age it appears to be so much to the good; if at the ends, a pure cost. The criterion is the age group 7-14, and is shown as follows:—

LX.—AVERAGE LENGTH OF SCHOOL LIFE AT AGES 7-14 AND INCREASES DURING THE PERIOD, CANADA AND PROVINCES, 1931 AND 1911

Province	Average Length of School Life at Ages 7-14		Increase in Length of School Life			Increase in Length of Time Actually Spent in School	P.C. of Increase in Actual Schooling at the Expense of the Beginning and End
	1931	1911	At Ages 7-14	At All Ages	At Beginning and End		
	years	years	years	years	years	years	
CANADA	7·44	6·38	1·06	1·93	0·87	1·97	44·2
Prince Edward Island	7·47	6·77	0·70	1·25	0·55	1·41	39·0
Nova Scotia	7·49	6·64	0·85	1·72	0·87	1·90	45·8
New Brunswick	7·23	6·42	0·81	1·32	0·51	1·50	34·0
Quebec	7·13	6·46	0·67	1·09	0·42	1·01	41·6
Ontario	7·65	6·75	0·90	2·10	1·20	2·20	54·5
Manitoba	7·53	5·99	1·54	2·47	0·93	2·53	36·8
Saskatchewan	7·55	5·36	2·19	3·26	1·07	3·43	31·2
Alberta	7·58	5·05	2·53	3·72	1·19	3·90	30·5
British Columbia	7·59	6·04	1·55	2·95	1·40	2·83	49·5

The last column shows the proportion of the actual gain in schooling in the twenty years that was at the expense of lengthening out the school life at both ends. In most cases this means lengthening it out at the latter end. The most expensive gain was in Ontario. Alberta, which shows the highest actual gain, was the most economical.

Standing Attained at School.—The foregoing deals only with time spent at or in school. There is no evidence from census data as to the standing actually reached as a result of this attendance except the figures on illiteracy. The Education Statistics Branch of the Dominion Bureau of Statistics collects data on the school grade reached. Since this branch began operation only during the decade, it is not possible to obtain comparative figures for 1931, 1921 and 1911, as in the case of time at school. However, the statistics of age by grade and other data make it clear that the grade at school is directly proportional to the full time spent in school and indeed proceeds almost exactly *pari passu*, *i.e.*, a full year at school means almost exactly one grade. This is, of course, for the average child. Some children do not progress this fast and others faster, but there is plenty of evidence that, if we take full years at school as the criterion for time spent, there are far too few children who proceed faster than a grade a year. The full proof of this is not possible in this study and, perhaps, would be out of place.

Table 33 shows what changes have taken place in seven provinces in the seven years up to the Census of 1931. This is measured by the average grade reached in 1924 and in 1931. Further, it shows the manner in which improvement has been effected. Even in this short space of time the average pupil was raised from about one-tenth of a grade in New Brunswick to 0·62 of a grade in Saskatchewan. It is not, however, in the raising of the grade that the changes have been most interesting and important, but in the manner of change in the various grades. The last part of Table 33 shows which grades have lost out and which have gained. In earlier years when children began school at a very young age and straggled in at all ages after this, attended irregularly and left early, the first four grades were over-crowded and the upper grades had a very light enrolment. The raising of the average grade was, of course, accomplished by decreasing the numbers in the lower grades and increasing them in the upper. If the children all started at the same age, attended with uniform regularity, left at the same age and were of equal mentality, then the number in each grade would vary exactly as the population at each age. That it does not is due to the absence of the four conditions mentioned plus certain other conditions, such as differences in teaching, etc. The chief factors operating against a smooth progression, however, were two, *viz.*, that the children did not begin together and did not attend equally regularly. That they did not do so has been made abundantly apparent in the first part of this chapter. The clearest evidence of what has been accomplished and the changes in

the seven years is found in the standing attained at ages 13 and 14, especially the latter. At the age of 14 the average pupil gained from 0·16 grades in Ontario to 0·62 grades in Saskatchewan, the reason for Ontario's small change being that it stood by far the highest at the beginning of the period. At the present time, evidently, the average child of 14 is in the high school entrance grade. A comparison of the grade reached at this age and the full time at school by this age is shown in Statement LXI, following:—

LXI.—AVERAGE GRADE AT THE AGE OF 14 AND AVERAGE NUMBER OF YEARS SPENT IN SCHOOL BY THE AGE OF 14, SEVEN PROVINCES OF CANADA, 1931

Province	Average Grade at 14 Years of Age	Average Number of Years Actually Spent in School by Age of 14
Prince Edward Island	7·36	6·77
Nova Scotia	6·96	7·09
New Brunswick	6·97	6·53
Ontario	7·67	7·35
Manitoba	7·13	7·00
Saskatchewan	7·33	6·82
Alberta	7·37	6·92

Considering that the two sets of figures do not represent exactly the same persons, the resemblance between them is remarkably close. Except in certain cases, the difference is not worth mentioning. Where the difference is at all significant it is seen that there is a large proportion of ungraded rural schools where the progress in step is not rigid as in the case of the graded schools. Thus, Nova Scotia, Ontario and Manitoba may be said to advance exactly one grade for every full year's attendance while the more rural provinces advance a little more than this but not much. Since this is so, the changes already described as taking place in the attendance may be considered to describe the changes that have taken place in school standing.

Chart 8, following, shows much more clearly the changes that have taken place in the seven provinces in the seven years.

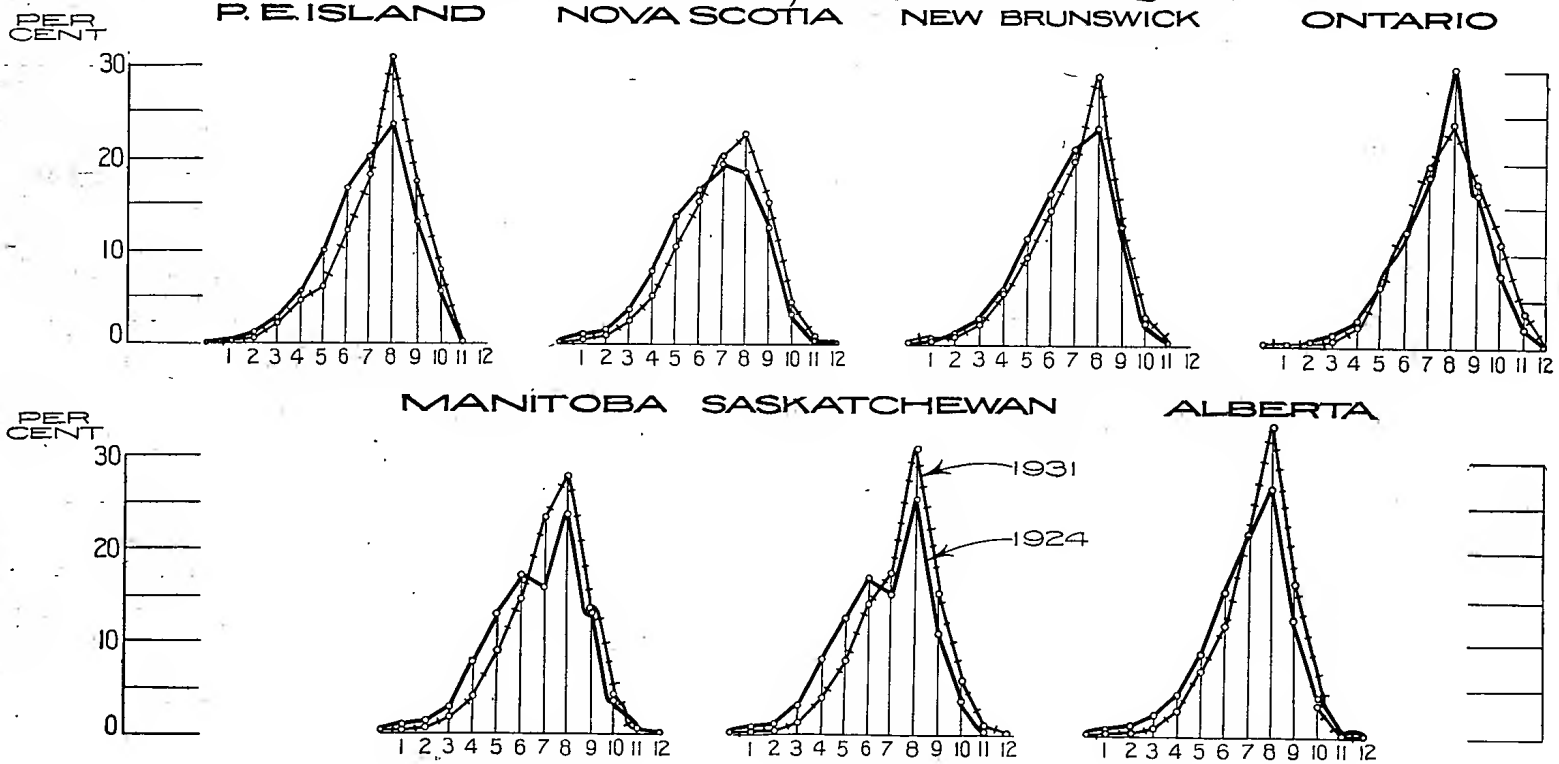
School Attendance and Sex.—Since school attendance has been found to be commensurate with school attainment as measured by grade reached, it will be interesting to compare the progress of the two sexes. In this case the average number of years at school has not been calculated, but a good idea of it will be given by the percentages at school at each single year of age in Statement LXII following:—

LXII.—PERCENTAGES OF POPULATION 5-24 YEARS OF AGE ATTENDING SCHOOL, BY SINGLE YEARS OF AGE AND SEX, AND INCREASE IN THE DECADE, CANADA, 1931-1921

Age	Both Sexes			Male			Female		
	P.C. at School in		Difference	P.C. at School in		Difference	P.C. at School in		Difference
	1931	1921		1931	1921		1931	1921	
5-24	51·89	49·27	2·62	51·62	49·22	2·40	52·17	49·32	2·85
5	11·29	14·06	−2·77	10·94	13·67	−2·73	11·64	14·47	−2·83
6	53·13	51·85	1·28	52·64	51·67	0·97	53·65	52·03	1·62
7	86·97	81·94	5·03	86·85	82·11	4·74	87·09	81·77	5·32
8	94·45	90·64	3·81	94·48	90·79	3·69	94·42	90·50	3·92
9	96·15	93·12	3·03	96·13	93·15	2·98	96·16	93·09	3·07
6-9	*82·74*	*78·86*	*3·88*	*82·56*	*78·91*	*3·65*	*82·93*	*78·80*	*4·13*
10	97·09	94·09	3·00	97·06	94·17	2·89	97·12	94·01	3·11
11	97·18	94·31	2·87	97·22	94·44	2·78	97·14	94·17	2·97
12	96·12	92·74	3·38	96·24	92·91	3·33	96·00	92·58	3·42
13	92·77	88·07	4·70	93·17	88·28	4·89	92·36	87·86	4·50
14	83·33	73·39	9·94	83·71	73·09	10·62	82·94	73·70	9·24
10-14	*93·44*	*88·71*	*4·73*	*93·61*	*88·75*	*4·86*	*93·26*	*88·68*	*4·58*
15	66·67	51·29	15·38	65·71	49·37	16·34	67·65	53·23	14·42
16	45·98	32·63	13·35	43·84	29·36	14·48	48·17	35·93	12·24
17	28·49	19·59	8·90	25·92	17·04	8·88	31·12	22·18	8·94
18	16·62	11·23	5·39	15·65	10·00	5·65	17·60	12·46	5·14
19	9·63	6·86	2·77	9·66	6·88	2·78	9·60	6·84	2·76
15-19	*33·67*	*24·79*	*8·88*	*32·25*	*22·95*	*9·35*	*35·09*	*26·67*	*8·42*
20-24	2·83	2·27	0·56	3·62	3·11	0·51	2·02	1·45	0·57

Chart 8

PER CENT AT EACH GRADE (1-12) OF CHILDREN 14 YEARS OF AGE, 7 PROVINCES OF CANADA, 1931 AND 1924



There are some striking differences in the changes which took place in the decade as between the two sexes. The later figures show about the same proportion of the boy and girl population at school up to the age of 14, a smaller proportion of the boy population from 15 to 18 and a larger proportion of boys after this age. The change in the decade was greater in the case of girls up to the age of 12, greater in that of boys from 13 to 16 and about equal thereafter. If we add up the unweighted percentages and take 10 months as the full school year, it gives us a good idea of the length of school life as follows:—

LXIII.—ESTIMATED LENGTH IN YEARS OF THE SCHOOL LIFE OF THE POPULATION 5-24 YEARS OF AGE, BY AGE GROUP AND SEX, AND INCREASE IN THE DECADE, CANADA, 1931-1921

Age Group	Estimated Length of School Life				Increase in Decade	
	Boys		Girls			
	1931	1921	1931	1921	Boys	Girls
	years	years	years	years	years	years
5-24	9·87	9·02	9·93	9·12	0·85	0·81
5	0·11	0·14	0·12	0·14	−0·03	−0·02
6- 9	3·30	3·18	3·31	3·17	0·12	0·14
10-14	4·67	4·43	4·66	4·42	0·24	0·24
15-19	1·61	1·13	1·74	1·31	0·48	0·43
20-24	0·18	0·16	0·10	0·07	0·02	0·03

The increase in the length of school life was practically the same in the case of both sexes, but 59 p.c. of this lengthening in the case of boys and 57 in the case of girls took place after the age of 15 years. In both cases the tendency to send children to school at the tender age of 5 lessened and in both cases the school life was prolonged by approximately the same amount by this decreased tendency to begin school early or remain a year or more out of school during school age. This has been shown to be to the good. The most striking difference between the two years in the case of both sexes is the increased attendance at the ages 15 and 16, more pronounced in the case of boys than of girls. There is little doubt that compulsory attendance acts played a part in these changes and, as already mentioned, if the state thus lengthened out the school life it has an urgent duty in seeing to it that no handicaps are placed in the way of making the best use of it.

Now, taking the actual time spent in school as measured by the average number of months at school during the year, we have the following:—

LXIV.—AVERAGE NUMBER OF MONTHS SPENT AT SCHOOL BY THE POPULATION 5-24 YEARS OF AGE, INCREASE IN THE DECADE AND PERCENTAGE OF POPULATION AT SCHOOL, BY SINGLE YEARS OF AGE AND SEX, CANADA, 1931-1921

Age	Average Months at School During the Year						P.C. at School			
	Boys			Girls			Boys		Girls	
	1931	1921	Difference	1931	1921	Difference	1931	1921	1931	1921
5-24	7·77	7·50	0·27	7·77	7·52	0·25	51·62	49·22	52·17	49·32
5	6·02	5·73	0·29	6·01	5·73	0·28	10·94	13·67	11·64	14·47
6	6·90	6·53	0·37	6·91	6·54	0·37	52·64	51·67	53·65	52·03
7	7·65	7·33	0·32	7·63	7·31	0·32	86·65	82·11	87·09	81·77
8	7·84	7·61	0·23	7·83	7·57	0·26	94·48	90·79	94·42	90·50
9	7·89	7·67	0·22	7·88	7·66	0·22	96·13	93·15	96·16	93·09
6-9	*7·66*	*7·37*	*0·29*	*7·64*	*7·35*	*0·29*	*82·50*	*78·91*	*82·93*	*78·80*
10	7·90	7·69	0·21	7·89	7·69	0·20	97·06	94·17	97·12	94·01
11	7·90	7·70	0·20	7·90	7·70	0·20	97·22	94·44	97·14	94·17
12	7·89	7·68	0·21	7·89	7·69	0·20	96·24	92·91	96·00	92·58
13	7·87	7·65	0·22	7·88	7·68	0·20	93·17	88·28	92·36	87·86
14	7·85	7·56	0·29	7·87	7·63	0·24	83·71	73·09	82·94	73·70
10-14	*7·89*	*7·66*	*0·23*	*7·89*	*7·68*	*0·21*	*93·61*	*88·75*	*93·26*	*88·68*
15	7·83	7·50	0·33	7·85	7·64	0·21	65·71	49·37	67·65	53·23
16	7·82	7·53	0·29	7·85	7·66	0·19	43·84	29·36	48·17	35·93
17	7·83	7·57	0·26	7·84	7·65	0·19	25·92	17·04	31·12	22·18
18	7·83	7·62	0·21	7·82	7·65	0·17	15·65	10·00	17·60	12·46
19	7·79	7·61	0·18	7·77	7·58	0·19	9·66	6·88	9·60	6·84
15-19	*7·82*	*7·54*	*0·28*	*7·84*	*7·65*	*0·19*	*32·28*	*22·93*	*35·09*	*26·67*
20-24	7·79	7·80	–	7·74	7·74	–	3·62	3·11	2·02	1·45

Taking the case of the boy or girl who went to school at 5 and continued till the end, we have the following figures estimated for the number of full years (9 months in this case is taken as a full year) at different age groups.

LXV.—ESTIMATED NUMBER OF YEARS (NINE-MONTH) SPENT AT SCHOOL BY THE POPULATION 5-24 YEARS OF AGE, BY AGE GROUP AND SEX, AND INCREASE IN THE DECADE, CANADA, 1931-1921

Age Group	Estimated No. of Years at School					
	Boys			Girls		
	1931	1921	Difference	1931	1921	Difference
5-24	17·08	16·66	0·42	17·06	16·68	0·38
5	0·67	0·64	0·03	0·67	0·64	0·03
6- 9	3·36	3·24	0·12	3·36	3·23	0·13
10-14	4·38	4·25	0·13	4·38	4·27	0·11
15-19	4·34	4·20	0·14	4·35	4·24	0·11
20-24	4·33	4·33	-	4·30	4·30	-

The total gain by regularity of attendance was 0·42 years in the case of boys and 0·38 in the case of girls. We have already seen that the lengthening of school life was 0·85 years in the case of boys and 0·81 in the case of girls. This shows that lengthening of school life was a considerably stronger factor in the change in the decade than regularity of attendance, *i.e.*, than making use of the time while they were in school. Out of this the ages of, say, 6-14, where both lengthening of school life and regularity of attendance might be considered assets, the school life was lengthened 0·36 years for boys and 0·38 for girls, while the time at school through regularity of attendance was increased 0·25 in the case of boys and 0·24 for girls.

On the whole, therefore, the change that took place in the decade was lengthening out the school life rather than making fuller use of it. This consisted of picking up the stragglers who used to come in at 7, 8, 9 and later for the first time, as well as, and more particularly, in extending school life into older ages. Consequently, no final judgment can be passed on the change as to whether it was all improvement or not. To the extent that the longer time at school was fully utilized by permitting free play to individual ability it was an undoubted improvement; to the extent that it was a lock-step machine-like operation it might even be injurious. Meanwhile, it must be borne in mind that the lengthening of school life should be charged to the expense side of the account, the use that was made of it to the credit side. Taking now the two sets of figures in conjunction for boys and girls and estimating the full time actually spent at school by the total population of each sex at each age, under conditions of 1931 as compared with those of 1921, we have the following figures:—

LXVI.—ESTIMATED TIME IN YEARS SPENT IN ACTUAL ATTENDANCE AT SCHOOL, BY SINGLE YEARS OF AGE AND SEX, CANADA, 1931 AND 1921

Up to Age	Estimated Years Spent in Actual Attendance				
	Both Sexes	Boys		Girls	
	1931	1931	1921	1931	1921
6	0·08	0·07	0·09	0·08	0·09
7	0·48	0·48	0·46	0·49	0·47
8	1·22	1·21	1·13	1·23	1·13
9	2·04	2·04	1·89	2·05	1·89
10	2·89	2·88	2·69	2·89	2·68
11	3·74	3·73	3·49	3·74	3·49
12	4·59	4·59	4·30	4·59	4·29
13	5·43	5·43	5·09	5·44	5·08
14	6·24	6·24	5·84	6·24	5·83
15	6·97	6·97	6·46	6·97	6·46
16	7·55	7·55	6·87	7·56	6·91
17	7·95	7·93	7·11	7·98	7·21
18	8·20	8·15	7·26	8·25	7·40
19	8·35	8·29	7·34	8·40	7·51
20	8·43	8·37	7·40	8·49	7·57
25	8·55	8·53	7·54	8·57	7·63

The above sets out the estimated number of years' schooling the present population is receiving as compared with the population of 1921, up to each year of age from 6 to 25, the single years 21-24 not included. This takes into account only the actual time they spend at school. "Up to age 6" means that they have not yet reached their sixth birthday and refers to the attendance

at the age of 5 years; similarly, "up to 7" means attendance at ages 5 and 6, and so on. It is seen that up to the age of 7, at either of the censuses and in the case of either sex, less than half a year's attendance has been put in. The school grades statistics in the *Annual Survey of Education* show that the average grade at the age of 6, *i.e.*, the achievement up to the age of 7, is 1·052, and this may be taken to allow for the non-attendance of those before the age of 6. This means that those actually attending at 6 have progressed 0·052 of a grade beyond the grade at which they entered school. The proportion of those attending school at this age who advanced beyond the grade at which they entered school was 5·5 p.c. Since 46·87 p.c. of the population at this age have not yet entered school, the figures for persons up to the age of 7 can be interpreted as follows:—

46·87 p.c. never entered school;
50·21 p.c. were in the grade at which they entered school;
2·92 p.c. advanced beyond the grade with which school life began.

Since 11·29 p.c. of the population enter school at the age of 5 and these are the persons who had the opportunity to advance a grade, it is seen how pitifully ineffective school attendance is at the age of 5. It is a striking fact that the situation is almost the same for each sex and at each period examined. Since there were 25,082 persons in 1931 attending school at the age of 5, this implies, on an average, a full year's service for 618 teachers (allowing 40 pupils to a teacher). At a salary of, say, $900, this would mean $555,000 for one-twentieth of a year's accomplishment on the part of these 25,000 pupils or $22 per child in addition to accommodation which would about double the sum mentioned. If we add to this the probability that attendance at this age is injurious to health and the certainty that it is robbing the person of carefree child-life, there seems to be no logic in beginning school at the age of 5.

Older School Children.—Out of the statement immediately referred to, as well as most of the foregoing statements and comments, arise two questions: (1) how much is gained educationally by the population as a whole by the lengthening out of school life beyond, say, the age of 16? (2) have we any proof or indication that this lengthening out of school life has been, partly at least, caused by economic conditions, particularly the recent depression?

It has been seen that the greatest change which has taken place in school attendance during the century has been the lengthening out of school life, part of which has been accomplished by a greater proportion attending school within what might be called the natural limits of school life, *viz.*, the ages of 7-14 years, but partly achieved by a greater proportion remaining at school to older ages—after the age of 16. As a matter of fact the life has been shortened at the younger ages, a smaller proportion attending at the age of 5 in 1931 than in 1921.

At the age of 16 the average number of years already spent at school under conditions of 1931 was 7·54 for boys and practically the same for girls.

The ten years since 1921 saw an improvement in this respect of 0·67 years in the case of boys and 0·65 in the case of girls, *i.e.*, probably a sufficient improvement to raise the average educational status by one school grade. This may be considered a raising of the educational level of the population from one on which they could hardly be said to be capable of applying their education to practical problems to one on which they might well be capable of doing so. Grade VIII, the present level, is high school entrance. In some provinces all the knowledge of arithmetic the pupil ever obtains formally at school is obtained before high school entrance. Similarly, such branches of knowledge as geography and Canadian and British history are covered once, in public school, and such subjects as agriculture and in some cases, bookkeeping, are covered sufficiently for ordinary practical problems. It is a far cry to high school entrance level of education from one of illiteracy on the part of the population as a whole. On the present level (at 16) the average person may be said to be "educated". To give a true concept of what this present level means it might be mentioned that about forty years ago, in certain provinces, persons were qualified to teach with a "Grade E" license. The academic qualifications for such a license were the equivalent of present-day high school entrance. That the average person at 16 to-day is academically qualified to teach under the conditions of forty years ago is rather startling. With this in mind, it is not only interesting but important to see how much more is gained by staying in school after the age of 16. In the case of the boys, the number of years actually put in at school from the age of 16 to 25, under the conditions of 1931, was 0·99, for girls 1·01; in 1921 it was

boys 0·67, girls 0·72; increase in deeade, boys 0·32, girls 0·29. Thus just one year of extra sehooling is obtained by the population after the age of 16; ten years ago only two-thirds of a year's sehooling was obtained after this age.

It has just been diseussed what the aequisition of this partieular year signifies and this will enable us to appraise the aetual gain by attendance up to the age of 25. Before we ean make a proper assessment it will be neeessary to show the exaet stages of education the persons over 16 years have reaehed. From the *Annual Survey of Education* we have the distribution of persons over 16 actually at school in 1931. Out of a sample of 208,861 persons known or assumed to be over 16 attending institutions of learning in 1931, the following was the grade standing or plaee by percentages of the whole (208,861). The statement immediately after shows the grade standing of 110,064 in public and private sehools at the age of 15.

LXVII.—GRADE STANDING OF PERSONS ATTENDING SCHOOL OVER AGE OF 16, CANADA, 1931

Weight	Grade	No.	P.C.
1	Kindergarten and kindergarten-primary	1	[1]
1	Grade I	158	0·08
2	" II	182	0·09
3	" III	302	0·14
4	" IV	676	0·32
5	" V	1,434	0·69
6	" VI	2,966	1·42
7	" VII	5,625	2·69
8	" VIII	14,549	6·97
9	" IX	17,617	8·43
10	" X	25,675	12·29
11	" XI	34,166	16·36
11	University preparatory	4,521	2·16
12	Grade XII	14,195	6·80
12	First year university	5,291	2·53
12	Normal School	7,956	3·81
11	Special	3,113	1·49
11	Day courses, private business colleges	15,343	7·35
13	Second year university	4,799	2·30
14	Third year university	3,278	1·57
15	Fourth year university	2,703	1·29
13	Special, university	440	0·21
13·2	Unspecified by year (university) hut full time students	2,094	1·00
16	Graduate students	2,041	0·98
12	Professional, part-time, short courses, etc.	39,736	19·03
	Total sample, 16 years of age and over	208,861	100·00
	Average grade	10·77	

(1) Less than one one-thousandth of one per cent.

LXVIII.—GRADE STANDING OF PERSONS ATTENDING SCHOOL AT AGE OF 15, CANADA, 1931

Weight	Grade	No.	P.C.
1	Kindergarten and kindergarten-primary	-	-
1	Grade I	200	0·18
2	" II	331	0·30
3	" III	612	0·56
4	" IV	1,595	1·45
5	" V	4,108	3·73
6	" VI	8,024	7·29
7	" VII	13,353	12·13
8	" VIII	25,559	23·22
9	" IX	21,329	19·38
10	" X	16,933	15·38
11	" XI	9,127	8·29
11	University preparatory	6,782	6·16
12	Grade XII	668	0·61
11	Special	1,443	1·31
	Total sample, 15 years of age	110,064	100·00
	Average grade	8·50	

It is nccessary to determine weights for this gradation and, while they may bc more or less arbitrary and, eonsequently, faulty, they are neeessary if an assessment is to be made. The "university preparatory" represented by the figures, then, may be eonsidered as equivalent to 11 years work; the businces eollegc or special as 11 years; the first university year, Grade XII and Normal School as 12, second year university as 13, third as 14, fourth as 15, speeial as 13;

unspecified full-time students as 13·2 (the average of the four university years); the graduate students as 16, and the mixed class of professional, part-time and short course as, say, 12, since more than half of these are doing work below university grade, their average standing being pulled up by the high standing of the professional element.

The average standing of persons who are actually attending educational institutions after the age of 16, this standing being translated into years, is 10·77. The average standing of persons attending public, private and university preparatory schools at the age of 15 is 8·50 years. Consequently, the standing attained because of attendance after the age of 16 is the difference or 2·27 years. Now, 45·98 p.c. of the population attend school for some time after their sixteenth birthday, so that this gain in standing distributed over the whole population is 1·04 years. (Already we have seen that the population, on an average, spends just 1 full school year at educational institutions after the age of 16.)

The dissemination of education among the total population, as distinguished from those remaining at school, can be roughly shown. Suppose we assume that a maximum of 99 p.c. of the population goes to school, 1 p.c. being the maximum estimate of those never attending school according to the figures on illiteracy. Then we can estimate the standing of all who leave school at the different ages as follows:—

Age of School Leaving	P.C. Leaving School	Average Grade (7 provinces)
11	1·08	4·65
12	3·42	5·62
13	9·63	6·61
14	16·99	7·47
15	21·10	8·32

The average grade of the population at 15 years of age (*i.e.*, under their sixteenth birthday) who have ever been to school according to this is 7·56 and, if we suppose 1 p.c. never went to school, the average grade of the total population at 15 would be brought down to 7·48. The average number of full years at school up to 16 is 7·55, so that each full year's schooling up to 16 is equivalent to just 1 grade and after 16 to 1·04 grades, a difference of 0·04 grades. There is thus a selection of 0·04 p.c. over and above the selection implied by the type of education received, for the average person could never attain university graduation standing. This selection, presumably, is due to the type of person as well as to the greater maturity of the age.

If we still assume that the decrease in percentage attending school (according to the census) from age to age represents those leaving school and that about 99 p.c. of the population attend school at some time, we have Table 34, Part II, showing the distribution of persons leaving school at different ages.

The foregoing deductions have a theoretical value in that confirmation comes in from all sides that these things can be measured. There is no reason why the census figures and the reports of teachers should agree so closely in the measuring of attributes except that such measurements are sound. If sound, there is no reason why they cannot be pushed further. It seems, then, that the elementary school supplies the needs of the average person for as long a time as he will spend at school. The high school and all higher institutions of learning are necessary for the stratum of the population that is intellectually or otherwise above the average. The educational level of the population is raised by this stratum to supply the intellectual needs of the country, for without doubt a mere elementary education does not satisfy these needs.

What is still more important is the idea that as much education as the average person receives could with full attendance be obtained by entering school on the seventh birthday and leaving just before the fifteenth birthday or, according to census terminology, "at ages 7-14". This would not supply the needs of the under-par person or the person who attended irregularly. In 1931 according to figures already given for persons over the age of 16 attending school, 5·43 p.c. were below Grade VIII and 6·97 in Grade VIII, while 87·60 were above this grade.

CHAPTER VIII

INFLUENCE OF PHYSICAL ENVIRONMENT AND POPULATION CONTENT UPON SCHOOL ATTENDANCE

Introduction.—In the two preceding chapters a study was made of the facts of school attendance and the changes in the century with an assessment of these changes. The treatment of the factors influencing school attendance is the task of this and the next chapter. These factors may be divided into two classes: (1) the physical and social environment, *i.e.*, the influences exerted by nature and by the social order in so far as they are communal or thrust upon the person or his family; (2) the personal elements such as family conditions. The physical and broader social factors will be treated in this chapter.

It must be remembered that eight of the nine provinces have some form of compulsory school attendance laws while the province of Quebec has many devices for encouraging school attendance although not a formal school attendance act. One of these devices is the tax for all persons of school age whether attending school or not; another is a moral or religious one. Since the teaching of religion is a part of the child's training, it stands to reason that those responsible for giving this training will use every effort to encourage the child to attend the place of instruction which is the school. A proof of the efficacy of this moral suasion is the fact that in regularity of attendance on the part of those who put in an appearance at school, Quebec, tying with Alberta, stands second best among the nine provinces.

Now it may seem strange, when these compulsory attendance and other laws are considered, that such concepts as social environment influencing school attendance should enter the picture at all. If all are governed by the same law, why should wide differences appear among different social classes? Yet such differences do appear. It is easy enough to understand how physical environment would affect school attendance because, no matter how strictly the laws are enforced, they cannot compel the child to attend school if there is no school within reach or if the climate is too severe to permit attendance.

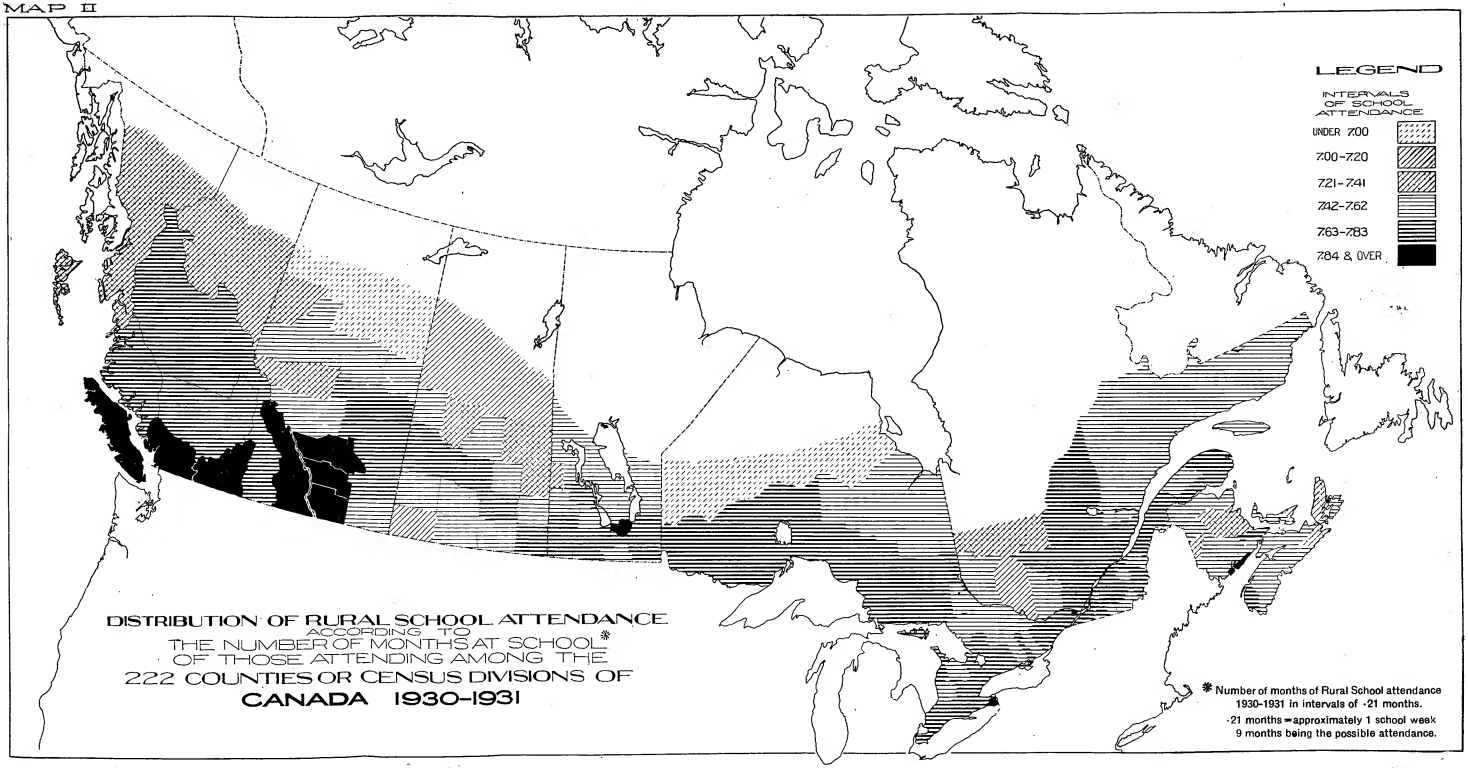
The explanation of why both physical and social environment are influential will be attempted in the proper place. Just here it is important merely to know that these influences exist.

Physical Environment.—In 1931 the census gave the number of persons attending school in the 222 counties or census divisions of Canada. The data thus given will now be used to portray the influences of physical environment. Table 35, Part II, shows the population, the number attending school and the average number of months at school, referring to persons at all ages in the rural parts of these counties. The rural parts alone are shown because it is not reasonable that physical environment would influence school attendance in urban localities.

There are two aspects to Table 35 which need examining: (1) the number at school in proportion to the population; (2) the average number of months at school as measuring regularity of attendance. The second of these will be considered first since we would expect that physical environment, especially climatic conditions, would affect regularity of attendance rather than *any* attendance. As explained in the other chapters, the possible number of months at school in any part was nine months, since the census called for only the number of months from September 1, 1930, to May 31, 1931. These, it is seen, consisted of two autumn and six winter months and one spring month, so that climatic conditions might be expected to exert a powerful influence on regularity.

Effects on Regularity of Attendance.—The differences in average months at school during the year associated with geographical conditions are surprisingly small. The average months at school vary only from a little below 7 to a little below 8 (out of the 9) in the 222 divisions, *i.e.*, there is a variation of a little more than 1 month from the division showing the poorest attendance to that showing the best attendance, barring the District of Patricia. If we arrange the divisions in descending order of months attendance and regard 0·21 months as equivalent to a week (*i.e.*, making allowance for the fact that the possible month is only 0·9 of a full school year), we have the number of divisions according to attendance in weekly intervals as follows:—

MAP II


LEGEND
INTERVALS OF SCHOOL ATTENDANCE
UNDER 7·00
7·00-7·20
7·21-7·41
7·42-7·62
7·63-7·83
7·84 & OVER
DISTRIBUTION OF RURAL SCHOOL ATTENDANCE
ACCORDING TO
THE NUMBER OF MONTHS AT SCHOOL*
OF THOSE ATTENDING AMONG THE
222 COUNTIES OR CENSUS DIVISIONS OF
CANADA 1930-1931
* Number of months of Rural School attendance 1930-1931 in intervals of ·21 months.
·21 months = approximately 1 school week
9 months being the possible attendance.

The variation in age is calculated from this to be almost twice as great as that in geographical divisions and considering that the number of different ages is so small and of counties so large this is very striking. It is also true to some extent that the age distribution enters into the differences in the counties. Only for the variability shown in ages and the fact that there is such close agreement between the full year at school calculated from the census figures and that exactly measured from teachers' returns, we would be inclined to suspect some error as causing the slight variation in attendance among the different census divisions; as it is, there is no ground for such suspicion. The conclusion would seem to be that the influence of physical environment upon school attendance, once the pupil is registered at school, is unimportant. It is only under extreme physical conditions that it is at all appreciable. This was pointed out in the monograph *Illiteracy and School Attendance in Canada* based on the 1921 Census, but the data used were not so closely examined as in the present instance.

Effects on Proportions Attending School.—Since there is so much uniformity as between geographical areas in the regularity in school attendance it seems remarkable that there is a wide variation in the proportions of the population attending school. If we base the attendance on the total population (*i.e.*, at all ages), we, of course, have the age distribution to reckon with, but even when the school attendance at ages 7-14 is based upon the population at 7-14, there is just as wide a variation—indeed wider. What the age distribution is likely to have to do with school attendance can be illustrated by taking the percentages at the same ages for each province. Since the use of every age of school life would merely blur the illustration let us take the extremes 7 and 14, and the age of 11, which has the maximum attendance, as follows:—

LXX.—PERCENTAGES OF THE POPULATION AT SCHOOL AT CERTAIN AGES, CANADA AND PROVINCES, 1931

Province	P.C. of Population at School at Age		
	7	11	14
CANADA[1]	86·97	97·18	83·33
Prince Edward Island	84·82	97·60	83·88
Nova Scotia	85·82	97·35	86·91
New Brunswick	83·81	95·51	77·51
Quebec	84·06	96·40	67·73
Ontario	90·86	98·22	90·40
Manitoba	87·88	97·27	87·32
Saskatchewan	85·33	97·09	91·99
Alberta	86·06	97·30	94·00
British Columbia	89·55	96·64	93·32

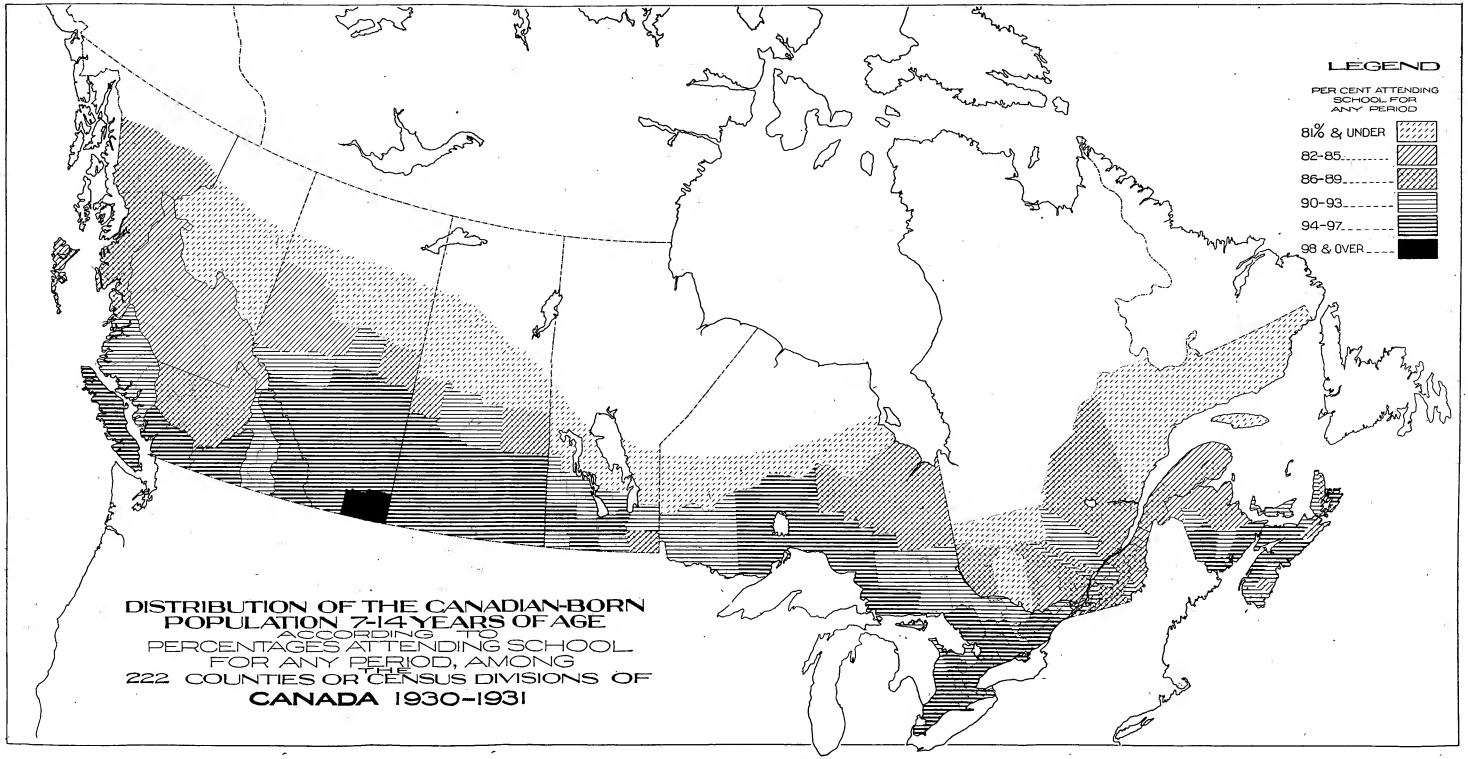
[1]Nine provinces only.

From the highest to the lowest percentage at the age of 7, there is only a range of 7·05 p.c.; at 11 a range of 2·71, but at the age of 14, a range of 26·27. Evidently, then, whatever extreme variation due to age occurs in geographical areas is caused by dropping out earlier than the age of 14, not to great differences in attendance at other ages.

Population Content—Effects on School Attendance and Relation to Physical Environment.—The manner in which the percentages at school, ages 7-14, are distributed among counties is shown, by nativity, in Table 36, Part II. Both sides of the situation are shown, *viz.*, percentage of the population 7-14 *at* school and *not* at school. It is really striking that in 26 counties the British born showed 100 p.c. at school and in 13 counties the foreign born showed the same, while in no county did the Canadian born show as high as 99 p.c. One useful fact is disclosed here, *viz.*, that it is possible for every child 7-14 to go to school, *i.e.*, if physically and mentally fit to do so. The fact that the British and foreign born are immigrant children and, consequently, not likely to have been admitted if unfit, may explain why 100 p.c. can be at school but it is not necessarily the explanation. The number of Canadian born in every county is so very large compared with the others that pure chance might be expected to bring it about that some would be found not at school. There is, therefore, no great significance in the fact that the Canadian born fail to reach 100 p.c. in any county.

It is a far more important matter that the attendance of the Canadian born is more uniform as between counties than that of the other two, the British being less uniform and the foreign still less—in fact, much less. A glance at the table is sufficient to show how scattered the attendance of the foreign born is. Notice that in 16 counties they have 98 p.c. or more at school while

MAP III



DISTRIBUTION OF THE CANADIAN-BORN POPULATION 7-14 YEARS OF AGE ACCORDING TO PERCENTAGES ATTENDING SCHOOL FOR ANY PERIOD, AMONG THE 222 COUNTIES OR CENSUS DIVISIONS OF **CANADA** 1930-1931

in another 17 they have 75 p.c. or less, *i.e.*, 25 p.c. or more out of school, while in 6 counties they have 43 p.c. or more out of school. Now, these variations in the foreign born as compared with the Canadian can have nothing to do with physical environment. The uniformity of the Canadian born shows how very little physical environment has to do with it. They have 23 p.c. or more not at school in 6 counties and these counties are extreme in latitude; but all except 7 are confined within the fairly narrow range of 3 to 20 p.c. not at school, while outside of this range there are 40 in the case of the foreign born—16 better and 24 worse. It is impossible to believe that the same physical environment would permit one set of people to go to school and prevent another set from going to school.

To show still more clearly how much physical environment has to do with school attendance the percentages foreign born attending school, county for county, according to the percentages of the Canadian born attending school, are given in the statement below. This statement shows that 20 counties have less than 80 p.c. of the foreign born attending school where the Canadian have more than this, while in only 2 counties have the Canadian less than 80 p.c. where the foreign born have more. It is only within a narrow range that there is a correlation between the attendance of the two classes, *viz.*, between 80 and 97, and even then the correlation is not very good. The effects of physical environment, therefore, must be very small and only noticeable in extreme climate and new, unsettled or mountainous parts as seen in Map III, which shows the Canadian born by six classes of percentage attendance in the different divisions of Canada.

LXXI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 220 COUNTIES ACCORDING TO PERCENTAGES ATTENDING SCHOOL OF CANADIAN BORN, IN RELATION TO PERCENTAGES ATTENDING SCHOOL OF FOREIGN BORN, CANADA, 1931

P.C. Attending School of Foreign Born	Number of Counties														Total
	P.C. Attending School of Canadian Born														
	98-99	96-97	94-95	92-93	90-91	88-89	86-87	84-85	82-83	80-81	78-79	76-77	74-75	73 and under	
100		2	3	3	1	4									13
98-99		1	2												3
96-97		14	5	2	1		1								23
94-95		16	7	4	2	3	3	1	1						37
92-93	1	6	12	5	3	1	1								29
90-91		2	8	6	3	1	1		1				1		23
88-89		1	7	5	4	2	1	1							21
86-87		1		3	2	4	3	1							14
84-85					3	3	3	1	1			1			12
82-83				3	1	2	3		1	1					11
80-81				1	2	1	3	2		1					10
78-79							2	2							4
76-77						2	1								3
74-75				1					1						2
72-73						1	1								2
70-71					2				1						3
68-69			1												1
66-67														1	1
64-65							1								1
60-61								1							1
56-57							1		1						2
50-51														1	1
45 and under									1					2	3
Total	1	43	45	33	24	24	25	9	8	2		1	1	4	220

Correlation of Percentages at School with Various Factors.—To make more certain of the possible effects of physical environment Table 37, Part II, further shows the percentages attending school in correlation with the density (per square mile) of population, the percentage urban, the percentage rural non-farm population and the percentage British races. The purpose of this table is to show the relative weights of each of these four factors in correlation with the percentage at school. Thedensity and the percentage urban are regarded as physical factors, the other two as social factors.

Throughout this study the use of the coefficient of correlation has been carefully avoided. In the 1921 monograph it was used extensively for the reason that the information tabulated by the census had largely an indirect bearing upon the phases treated. Later tabulations bearing directly upon these phases confirmed the conclusions arrived at by the correlation method. In the case of the 1931 Census, tabulations were made bearing directly upon these phases so that deduction from inference or correlation has not been found necessary. In the case of Table 37, however, it was considered expedient to resort to this correlation method. The reason for this can readily be seen from the headings of the columns. The number of children attending school in the rural parts of the counties was not tabulated for the ages of 7-14, the age limits of 5-24 being used instead. Since the number attending school at 7-14 in these rural areas was not known, use was made of the multiple correlation method to measure the variations in school attendance as between counties where the percentage urban was rendered constant. The chief quest was to ascertain the effects of physical environment, other things being equal, the "other things" being factors not connected with physical environment. In this case the other factors selected were percentage urban, percentage rural non-farm population and percentage British races. Thus the farm population was taken as the ideal for rural upon which physical environment was most likely to play. The rural non-farm population is, in most cases, settled in unincorporated population aggregates which are likely to be situated close to schools. Where thus in proximity to schools there is no reason why physical environment should play any part in keeping the children from school. If the rural non-farm or urban population shows poor attendance it must be something social, not physical. To make absolutely sure of this, *i.e.*, eliminate the cases where the non-farm was likely to be a scattered population, counties in the extreme north were omitted from the calculation. In a sample of 55 counties (selected at random from the 220 counties, after omitting such counties as were all urban and others in the extreme latitudes) the multiple correlation of percentages at school, 7-14, with (1) the density of population, (2) the percentage urban, (3) the percentage rural non-farm and (4) the percentage British races, was found to be only 0·75. The correlation was almost entirely with the percentage British races. That with density of population was *nil.* It is true that the density of population is not a perfect criterion of physical environment, especially with areas as large as counties. Several counties are long and narrow, a part of them extending into northern latitudes. In such counties the population is situated in the southern parts so that the density may be great where there is any population but when the total population is divided by the area of the entire county the density is found to be low. However, it is the least misleading of a number of devices tried out to show the development of settlement and, on the whole, a county with high density is at an advanced stage of settlement, *i.e.*, it has had time to build schools not too far apart for all the school population to attend. Generally speaking, the rural non-farm population shows a negative correlation, *i.e.*, it is a disadvantage to school attendance to have the rural population non-farm. This must surely be a matter of class of people. Already it has been shown that the children of such persons as miners, fishermen and lumbermen are apt to be more illiterate than the average. Such occupations are apt to be represented largely among the rural non-farm population. The equation is as follows: $X_1 = \cdot 0055\ X_2 + \cdot 0427\ X_3 - \cdot 0150\ X_4 + \cdot 0987\ X_5$, where

X_1 = percentage attending school;
X_2 = the density per square mile;
X_3 = the percentage urban population;
X_4 = the percentage rural non-farm;
X_5 = the percentage British races.

The averages are: $X_1 = 91$; $X_2 = 24$; $X_3 = 32$; $X_4 = 17$, and $X_5 = 49$. The standard deviation of X_1 is 4·4. The relative importance of the different factors in terms of the square of this standard deviation is measured as follows: −0·0041; 1·0342; 0·1211; 9·6706, *i.e.*, the relative importance

of the density, urban, rural non-farm and British is respectively as 1·252, 30 and 2,360[1]. Almost 90 p.c. of the total square correlation of 0·56 is due to British races.

Conclusion.—The general conclusion is, that except in the case of extreme latitudes, the physical environment exerts a negligible influence upon the percentage attending school. In other words, it is only in extreme cases that children fail to turn up at school at some time during the year because of lack of schools, climate, distances, etc. This was fore-shadowed in the statement that most of the non-attendance of the 7-14 group was because of dropping out of school before reaching the age of 14. It is unreasonable to suppose that 14-year-old children would be kept out of school by such things as weather, when younger children attended. The non-attendance of the 7-14-year-olds may be considered as almost entirely a social phenomenon. That this social phenomenon is to a marked extent racial is shown by the influence of the British races but there is still a great deal left to explain. This explanation will be furnished in the next chapter.

[1] ·0055 $X_1 X_2 = -·0041$; ·0427 $X_1 X_3 = 1·0342$
·0150 $X_1 X_4 = ·1211$; ·0987 $X_1 X_5 = 9·6706$

CHAPTER IX

INFLUENCE OF HOME ENVIRONMENT UPON SCHOOL ATTENDANCE

Introduction.—The aim of the previous chapter was to examine the relative importance of the social and physical environment in regard to their influence upon school attendance. Though the results may have shown their actual importance and influence it established no direct relationship between the children not at school and their home conditions, *viz.*, the educational status of parents or guardians, their conjugal condition, etc.

It is most important to trace this family history in order to find whether there is any connection between the type of home conditions and the non-attendance of children from these same homes. Special attention has been given in this census—more than in previous ones—to the methods of collecting and classifying the information concerning parents and guardians in relation to the school attendance of their children. As a result their home conditions and consequent influence may now be clearly shown for practically all the children who are not attending school.

Distribution of Children 7-14.—The number of children between the ages of 7-14 not at school in 1931 was 121,279 or 6·91 p.c. of the total population at these ages (this population being 1,755,348, exclusive of Yukon and Northwest Territories). The family tables account for 1,724,130 of these children, leaving 31,218 who are not reported in the family tables. A large number of the latter are in institutions, while others, no doubt, especially the oldest of them, are boarding or apprenticed or homeless.

The 1,724,130 attached to families are distributed among different types of families as follows:—

LXXII.—DISTRIBUTION OF CHILDREN 7-14 YEARS OF AGE IN FAMILIES, BY TYPE OF FAMILY AND CLASS OF CHILDREN, CANADA, 1931

Class	In Families		
	Total	With Two Heads[1]	With One Head[2]
Children 7-14	1,724,130	1,568,003	156,127
Own children	1,686,358	1,540,451	145,907
Guardianship children	37,772	27,552	10,220

[1]Husband and wife living together. [2]Married but separated, widowed, etc.

Of the children (7-14) born to the family head or heads, 96,209 were not at school.

LXXIII.—DISTRIBUTION OF CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL, BY TYPE OF FAMILY AND CLASS OF CHILDREN, CANADA, 1931

Item	Number
Total not at school at ages 7-14	121,279
Total own children	96,209
Husband and wife living together	86,793
Widowed, separated or single heads	9,416
Total other than own children	25,070
Guardianship children not at school	3,203
Remainder of those not at school (*i.e.*, neither own nor guardianship)	21,867

Now the 21,867 must have been from the 31,218 children not attached to families, *i.e.*, out of 31,218 children who were either homeless or in institutions. It is important at the outset to notice, on the one hand, that these 25,070 account for almost 20·7 p.c. of all the children not at school at this age and, on the other hand, that the 68,990 children who have not their own parents show over 36 p.c. not at school as compared with 5·7 p.c. of the 1,686,358 children who are

living with their parents. These 25,070 thus not at school are somewhat of a mystery and suggest how strongly anti-social influences affect school attendance, although it is by no means certain what the causes of school non-attendance among these are. Remembering that the percentage not at school among children living with their parents is 5·7, the 68,990 not living with parents would show at this rate, 3,932 not at school instead of 25,070. The difference of 21,138 could be attributed to the parentless state if we were sure who or where these children are, but we are not sure. Some of the 68,990, as mentioned, were institutional cases and presumably most of these were at school, so that of the remainder an enormous percentage were not at school. One is always afraid of coming to definite conclusions about figures like this because it is never certain whether the "nots" include persons who may have been at school but did not report the fact to the census enumerator. The point is so important that we are justified in probing further. If the number of children not at school, with and without parents, is broken up by provinces the results may be illuminating.

LXXIV.—CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL, LIVING WITH AND APART FROM PARENTS, CANADA AND PROVINCES, 1931

Province	Children 7-14 Not at School		
	Total	Living with Parents	Not Living with Parents
CANADA	121,279	96,209	25,070
Prince Edward Island	987	779	208
Nova Scotia	5,774	4,592	1,182
New Brunswick	7,295	6,110	1,185
Quebec	55,861	45,756	10,105
Ontario	22,654	15,659	6,995
Manitoba	7,171	5,829	1,342
Saskatchewan	9,905	7,892	2,013
Alberta	6,672	6,027	645
British Columbia	4,960	3,565	1,395

There is no further light thrown on these children by the breaking up into provinces. With the exception of New Brunswick, Ontario and Alberta, the provinces show very nearly the same ratio of the parentless children to the total children not at school and this would seem to indicate that they are not likely to be merely an unspecified class. They cannot be broken up into rural and urban or race and nativity classes, since the total not at school at these particular ages is not thus broken up. Consequently, anything that can be said about the 25,070 parentless children not at school is mere surmise. Meanwhile, it is important to remember that the children 7-14 not at school whose cases can be examined are limited to those found in families, *viz.*, 96,209 children born to the family and 3,203 guardianship children, or 99,412 in all out of 121,279.

Own and Guardianship Children.—The first point to be examined is whether there are indications of difference between the "own" and guardianship children in the matter of school attendance. The two classes in number and number not at school compare as follows:—

LXXV.—NUMBER AND PERCENTAGE OF CHILDREN 7-14 YEARS OF AGE, IN FAMILIES, NOT AT SCHOOL, BY CLASS OF CHILDREN, CANADA, 1931

Class	Total	Not at School	
		No.	P.C.
Children 7-14	1,724,130	99,412	5·77
Own children	1,686,358	96,209	5·71
Guardianship children	37,772	3,203	8·48

If the guardianship children showed the same percentage out of school as those born in the family they would have had 2,157 instead of 3,203, so that the difference, or 1,046, must be attributed either to the fact that they are guardianship children or to some other cause or causes more closely associated with guardianship than with parentage. Several such causes may be mentioned, *e.g.*, the guardian may be more illiterate than the parent or the marital status may be different and both these may influence the non-attendance. We are able to investigate both.

Of children living with parents and not going to school as compared with children living with guardians the following facts are known:—

LXXVI.—CHILDREN 7-14 YEARS OF AGE, IN FAMILIES, NOT AT SCHOOL, BY CLASS OF CHILDREN AND LITERACY OF PARENT OR GUARDIAN, CANADA, 1931

Class	Total	With Literate Parent or Guardian	With Illiterate Parent or Guardian	
			No.	P.C.
Children 7-14 not at school	99,412	77,177	22,235	22·4
Living with parents	96,209	74,758	21,451	22·3
Living with guardian	3,203	2,419	784	24·5
P.C. in the guardianship class	3·2	3·1	3·5	-

To make the matter still clearer Tables 38 and 39, Part II, and Statement LXXVIII are supplied showing: (1) the numerical and percentage non-attendance of children living with parents sub-divided as to marital status, nativity class and provinces; (2) similar data for children living with guardians, by provinces but not by nativity or marital status.

LXXVII.—NUMBER AND PERCENTAGE OF CHILDREN 7-14 YEARS OF AGE, IN FAMILIES, NOT AT SCHOOL, BY CLASS OF CHILDREN AND LITERACY OF PARENT OR GUARDIAN, CANADA, 1931

Item	Total	Not at School	
		No.	P.C.
Children 7-14	1,724,130	99,412	5·77
Living with one or both parents	1,686,358	96,209	5·71
Parent or parents literate	1,414,960	74,758	5·28
One or both illiterate	125,491	21,451	17·09
Living with guardian	37,772	3,203	8·48
Guardian literate	33,998	2,419	7·12
Guardian illiterate	3,774	784	20·77

The question is this: since the not-at-schools of the guardianship children is 8·48 p.c. and of the other children is 5·71 p.c., how much of the difference is due to the fact that they are guardianship children and how much to the fact that the guardians are illiterate? Roughly, we can reason as follows: the literate guardians show 7·12 p.c. not at school as compared with 5·28 p.c. in the case of literate parents. If the difference, or 1·84 p.c., is due to guardianship, this would amount to 626 children (1·84 p.c. of 33,998) not at school because of guardianship. Similarly, 1·84 p.c. of 3,774, or 69, would be out of school because of guardianship, making a total of 695 out of school because of *guardianship*. But 1,046 children in all were out of school from causes responsible for the difference between 8·48 p.c. and 5·71 p.c. Of these 695 were attributed to guardianship; therefore, the remainder, or 351, may be attributed to *illiteracy, i.e.*, to the fact that guardians were more illiterate than parents. Although this is a rather unscientific method of procedure it is sufficiently logical to show that guardianship is apparently inimical to school attendance. Of course, it is possible that the guardians were more unfavourably situated with relation to physical environment, race, etc., than the parents, so that it is not certain that these 695 were entirely due to guardianship. It would be almost impossible to exhaust the possibilities, but there are indications at least that guardianship is unfavourable.

LXXVIII.—NUMBER AND PERCENTAGE OF GUARDIANSHIP CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL, BY LITERACY OF GUARDIAN, CANADA AND PROVINCES, 1931

Province	Total	Guardianship Children 7-14 Not at School					
		No.			P.C.		
		Total	Literate Guardian	Illiterate Guardian	Total	Literate Guardian	Illiterate Guardian
CANADA	37,772	3,203	2,419	784	8·48	7·12	20·77
Prince Edward Island	697	46	42	4	6·60	6·38	10·26
Nova Scotia	3,481	266	202	64	7·64	6·48	17·68
New Brunswick	2,452	268	170	98	10·93	8·30	75·00
Quebec	10,387	1,471	1,168	303	14·16	12·97	21·91
Ontario	11,398	473	400	73	4·15	3·71	11·85
Manitoba	2,187	177	129	48	8·09	6·65	19·35
Saskatchewan	2,897	185	127	58	6·39	4·84	21·09
Alberta	2,253	139	101	38	6·17	4·86	21·97
British Columbia	2,020	178	80	98	8·81	4·58	35·77

Marital Status and Size of Family.—For many reasons it is convenient to show the school non-attendance aspect of marital status and size of family together. One of these is that the facts appearing in connection with marital status may be misleading if the size of the family is not taken into consideration. Thus, if larger families show more non-attendance than smaller families, it stands to reason that separated, widowed and single heads having smaller families than two married heads will appear in an undeservedly unfavourable light. It is advisable to correct the non-attendance of each marital status for size of family. As the table stands, the percentage not at school shows as follows:—

Two married heads	5·63
Wife or husband absent	5·92
Widowed head	6·70
Divorced head	4·06
Single head	15·08

It will be interesting to see how these figures will compare when corrected for size of family. The necessity for this correction will be readily seen by taking the non-attendance of children according to size of family as follows:—

1 child	4·75
2- 3	4·31
4- 6	5·58
7- 9	7·42
10-12	8·78
13-18	8·32

Clearly the larger families show more non-attendance than the smaller. One of the reasons for this is, undoubtedly, the fact that there are apt to be more children at the age of 14 in the larger families and we know that one of the major causes of non-attendance is dropping out before the age of 15.

The corrections are made by allowing the same size of family to each of the marital classes, *viz.*, the size that prevails in "all classes" as follows:—

	P.C. of All Children
Total	100·0
Families having—	
1 child	5·5
2- 3 children	28·4
4- 6 "	40·9
7- 9 "	19·9
10-12 "	4·8
13-18 "	0·5

Now, supposing each marital class to have size of family distributed as above and the percentage not at school in each size as actually obtains, we have the following:—

LXXIX.—ACTUAL AND CORRECTED PERCENTAGES OF OWN CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL AND INDEX OF FIGURES CORRECTED FOR SIZE OF FAMILY, BY CLASS OF HEAD, CANADA, 1931

Class of Head	P.C. Own Children 7-14 Not at School		Index of Corrected Figure
	Corrected for Size of Family	Actual	
Two married heads	5·60	5·63	100·0
Wife or husband absent	6·39	5·92	114·1
Widowed head	6·85	6·70	122·3
Divorced head	6·11	4·06	109·1
Single head	15·08	15·08	269·3

Since the numbers in the single class were so small the percentage was left untouched. It is clear that marital status has a strong influence on school attendance, the best state being where both parents are present. If we now take the numbers in Table 40, Part II, and correct according to the index in the last column of the above statement, we find that of the 96,209 children born in families and not at school, there were, because of, or associated with, the lack of one parent:—

306 not at school, for married but separated heads;
1,250 not at school, for widowed heads;
6 not at school, for divorced heads;
12 not at school, for single heads.

In all, 1,574

When we add to this total the 695 associated with guardianship, we find 2,269 out of school owing to, or under circumstances connected with, lack of parents. These are in addition to the 21,867 out of school who are not in any way connected with families.

Illiteracy of Parents.—It is now the task to calculate the children out of school because of the illiteracy of parents. The following is a summary of the facts.

LXXX.—NUMBER AND PERCENTAGE OF OWN CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL, BY NUMBER AND LITERACY OF PARENTS, CANADA, 1931

Class	No.	P.C.
Own children 7-14 not at school	96,209	5·71
Literate parents	74,758	4·82
Illiterate parents	21,451	15·94
Children with two parents	86,793	5·63
Both parents literate	67,158	4·75
Mother illiterate	4,011	11·31
Father illiterate	8,166	14·60
Both illiterate	7,458	21·86
Separated head or one head	9,416	6·45
Literate	7,600	5·56
Illiterate	1,816	19·95

Reasoning as before, the literate parents have 4·82 p.c. children not at school, so that only the remainder of the 15·94 can be due to the illiteracy of the parents. This remainder, *viz.*, 11·12 p.c., accounts for 13,486 children not at school, but about 1,574 of these were due to lack of parents, leaving 11,912 out of school because of, or connected with, the illiteracy of the parents.

It is interesting to see that the illiterate father seems to be more influential than the illiterate mother; also that both parents being illiterate is more influential than either.

The numbers mentioned above as being kept out of school by illiteracy of parents are only rough as is also true of the numbers attributed to guardianship and separation of parents. A much more careful measurement will be made in summarizing, with results slightly different in dimensions but the same in principle. Summing up, so far we have attributed school non-attendance to different potential conditions as follows:—

21,867 not at school and not found in families;
695 attributed to guardianship;
1,574 attributed to having only one parent;
11,912 attributed to illiteracy of parents;
36,048 attributed to all these causes.

This is out of a total of 121,279 not at school, *i.e.*, 30 p.c. or almost one-third. Even if these figures are rough, the importance of the influence of parents in keeping children out of school is illustrated. This influence, be it noticed, is exerted in spite of compulsory laws and public opinion. Of course it is still possible that other influences are mixed up with these, *i.e.*, that the parents or guardians who are illiterate, etc., are more unfavourably situated than the others. This may be examined by means of Tables 38 and 39, Part II, which show the distribution of the children not at school by provinces and nativity classes.

Nativity Class of Parents.—For examination of this influence in keeping children out of school Table 39 is recommended, where the percentages not at school for literate and illiterate parents and for two-parent or one-parent-only children are given by provinces and Canadian, British and foreign birth. A summary of this table is as follows:—

LXXXI.—PERCENTAGES OF OWN CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL, BY LITERACY, NUMBER AND NATIVITY OF PARENTS, CANADA, 1931

Nativity of Parents	P.C. Children 7-14 Not at School Having			
	Two Parents Living Together		One Parent Only	
	Literate	Illiterate	Literate	Illiterate
Canadian-born	5·66	20·51	6·68	27·50
British-born	2·11	9·41	2·46	4·76
Foreign-born	4·07	7·00	4·36	7·22

It is clear that the influence of the condition of parents is strongly marked in all classes but particularly in the case of the Canadian-born. Taking now the Canadian-born parents and examining the percentages of children not at school with illiterate parents over and above the percentages with literate parents we have the following:—

LXXXII.—DIFFERENCES IN PERCENTAGES NOT AT SCHOOL BETWEEN CHILDREN 7-14 YEARS OF AGE OF LITERATE AND ILLITERATE CANADIAN-BORN PARENTS, AND THE DIFFERENCES AS MULTIPLES OF PERCENTAGES NOT AT SCHOOL WITH LITERATE PARENTS, CANADA AND PROVINCES, 1931

Province	Difference in P.C. Not at School with Literate and Illiterate Canadian-Born Parents		Difference as Multiple of P.C. Not at School with Literate Canadian-Born Parents	
	Two Parents Living Together	One Parent Only	Two Parents Living Together	One Parent Only
CANADA	14·85	20·82	2·62	3·12
Prince Edward Island	6·47	15·70	1·27	2·41
Nova Scotia	11·63	15·32	2·51	2·50
New Brunswick	15·32	16·37	2·62	2·13
Quebec	10·61	14·10	1·28	1·32
Ontario	10·46	15·84	3·31	4·53
Manitoba	26·23	33·69	5·38	5·91
Saskatchewan	37·86	40·63	10·07	10·55
Alberta	39·50	39·55	9·02	7·96
British Columbia	38·42	38·72	14·66	10·85

The remarkable feature of these figures is that the greatest differences between the percentages not at school of children with literate or illiterate parents are not in the provinces with little or no compulsory attendance legislation but rather in those that have. The greatest relative differences are, of course, in the provinces which show the best attendance of children with literate parents and this obscures the figures, but it would seem to be evident that it is not slack laws that are at the bottom of the phenomenon. The Indian population is partly responsible for the situation but not, by any means, wholly. It is interesting to see that the absolute differences are greater in all provinces in the case of the one-parent children. This fact goes to show that the influence of marital status pointed out above is not accidental. It prevails in all localities and to a considerable extent. Another interesting point is the uniformity in the last two columns as between two-parent and one-parent children, except in the case of Prince Edward Island. It seems that an almost uniform ratio exists between the percentages not at school of children with illiterate parents and of children with literate parents, *i.e.*, the non-attendance of children of illiterate parents is proportional to the non-attendance of children with literate parents as between the different marital classes. This would argue that school non-attendance was in some way a mathematical function of the influence of parents, *i.e.*, that two parents exert a definite number of times as much influence as one parent on school non-attendance, and that in spite of laws to the contrary.

Summary of Influence of Illiterate and of One Parent.—The foregoing measurements of these influences were only rough and for illustrative purposes. In Statements LXXXIII and LXXXIV are to be found results of much more careful measurements, the figures of which differ somewhat, but not materially, from the figures already given. The method is described in a footnote. The data showing the calculated school non-attendance separately associated with want of and illiteracy of parents are given by provinces and by Canadian, British and foreign birth. Summing up from the results of these tables we have the numbers not at school associated separately with:—

Not being found in families	21,867
Guardianship	695
Lack of one parent	1,678
Illiteracy of parents	14,079
Illiteracy of guardian	430
Total	38,749

LXXXIII.—ESTIMATED NUMBER AND PERCENTAGE OF OWN CHILDREN 7-14 YEARS OF AGE, IN FAMILIES WITH ONE HEAD ONLY, NOT AT SCHOOL DUE TO SEPARATED PARENTS, BY LITERACY AND NATIVITY OF HEAD, CANADA AND PROVINCES, 1931

Nativity of Head	Estimated[1] Own Children 7-14 Not at School Due to Separated Heads of Families					
	No.			P.C.		
	Total	With Literate Parent	With Illiterate Parent	Total	With Literate Parent	With Illiterate Parent
CANADA	1,678	1,369	309	1·15	1·00	3·39
Prince Edward Island	25	23	3	1·66	1·50	11·11
Nova Scotia	143	121	22	1·56	1·39	4·46
New Brunswick	120	101	19	1·88	1·77	2·82
Quebec	974	819	155	2·56	2·31	5·95
Ontario	211	149	62	0·46	0·34	3·63
Manitoba	59	36	33	0·67	0·39	3·19
Saskatchewan	33	25	8	0·24	0·20	0·70
Alberta	20	18	2	0·18	0·18	0·25
British Columbia	82	77	5	0·81	0·81	0·80
Canadian born	1,436	1,161	275	1·50	1·29	4·80
Prince Edward Island	24	21	3	1·57	1·40	11·11
Nova Scotia	133	113	20	1·67	1·49	5·17
New Brunswick	115	96	19	1·94	1·83	2·89
Quebec	882	745	137	2·61	2·37	5·84
Ontario	160	101	59	0·52	0·34	5·73
Manitoba	54	32	22	1·30	0·82	8·33
Saskatchewan	12	4	8	0·25	0·09	2·76
Alberta	20	18	2	0·58	0·58	0·66
British Columbia	36	31	5	0·99	0·96	1·17
British born	99	99	–	0·41	0·41	–
Prince Edward Island	–	–	–	–	–	–
Nova Scotia	7	7	–	0·83	0·88	–
New Brunswick	–	–	–	–	–	–
Quebec	45	45	–	2·31	2·32	–
Ontario	33	33	–	0·33	0·33	–
Manitoba	4	4	–	0·17	0·17	–
Saskatchewan	7	7	–	0·28	0·29	–
Alberta	–	–	–	–	–	–
British Columbia	3	3	–	0·07	0·07	–
Foreign born	143	109	34	0·56	0·49	1·04
Prince Edward Island	2	2	–	10·00	10·00	–
Nova Scotia	3	1	2	0·78	0·31	3·39
New Brunswick	5	5	–	2·25	2·43	–
Quebec	47	29	18	2·07	1·43	7·32
Ontario	18	15	3	0·36	0·35	0·46
Manitoba	11	–	11	0·29	–	1·44
Saskatchewan	14	14	–	0·22	0·25	–
Alberta	–	–	–	–	–	–
British Columbia	43	43	–	1·84	2·00	–

[1]The differences in the percentages not at school of children in families with two married heads and one head only (Col. 4—Col. 1 of Table 39) were applied to the individual groups of Canadian-, British- and foreign-born children 7-14 years of age of literate and illiterate parents in the nine provinces.

LXXXIV.—ESTIMATED NUMBER OF CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL DUE TO ILLITERACY OF PARENT OR GUARDIAN, BY KIND AND NATIVITY OF HEAD, CANADA AND PROVINCES, 1931

Nativity of Head	Estimated[1] No. of Children 7-14 Not at School Due to Illiteracy of Parent or Guardian			
	Total	With Parents Living Together	With Separated Heads of Families	With Guardians
CANADA	14,509	12,809	1,270	430
Prince Edward Island	28	22	4	2
Nova Scotia	671	568	63	40
New Brunswick	1,828	1,657	111	60
Quebec	5,032	4,573	357	102
Ontario	1,825	1,606	173	46
Manitoba	1,154	994	134	26
Saskatchewan	1,435	1,265	126	44
Alberta	1,047	894	125	28
British Columbia	1,489	1,230	177	82
Canadian born	–	11,346	1,157	–
Prince Edward Island	–	22	4	–
Nova Scotia	–	513	59	–
New Brunswick	–	1,565	108	–
Quebec	–	4,379	331	–
Ontario	–	1,491	163	–
Manitoba	–	613	89	–
Saskatchewan	–	1,032	118	–
Alberta	–	749	119	–
British Columbia	–	982	166	–
British born	–	106	2	–
Prince Edward Island	–	–	–	–
Nova Scotia	–	50	1	–
New Brunswick	–	2	–	–
Quebec	–	15	–	–
Ontario	–	15	1	–
Manitoba	–	2	–	–
Saskatchewan	–	10	–	–
Alberta	–	4	–	–
British Columbia	–	8	–	–
Foreign born	–	1,357	111	–
Prince Edward Island	–	–	–	–
Nova Scotia	–	5	3	–
New Brunswick	–	90	3	–
Quebec	–	179	26	–
Ontario	–	100	9	–
Manitoba	–	379	45	–
Saskatchewan	–	223	8	–
Alberta	–	141	6	–
British Columbia	–	240	11	–

[1] The differences in the percentages not at school of children with literate and illiterate parents in families with parents living together (Col. 3—Col. 2 of Table 39) were applied to the total number of children 7-14 years of age with illiterate parents living together, and the differences in families with separated heads (Col. 6—Col. 5 of Table 39) were applied to the total number of children 7-14 years of age with illiterate parent in families with separated head, for the individual groups of Canadian, British and foreign born in the nine provinces.

Children of Two Literate Parents Living Together.—The foregoing analysis leaves 82,530 children who are not at school and whose absence cannot be associated with the illiteracy or marital status of parents. There are many other social or anti-social conditions over and above physical conditions that may be responsible for the absence of these from school. It must be mentioned once more that the absence from school is most likely to occur at the extreme ages of the 7-14 range, *i.e.*, the age of 7 or that of 14, although some absence occurs at the other ages as well. One of the anti-social conditions is likely to be poverty. While there are no direct data to enable us to measure the results of this condition, there are means of approach in the data on occupations.

Occupational Distribution of Family Heads.—In 1931 the number of children 7-14 in and out of school was tabulated by occupation and provinces. This refers to children with both parents living together so that the facts are not obscured by the effects of separation. The data would be ideal if we could show by occupation the number out of school with literate parents, but this was not tabulated. Table 42, Part II, shows by province and occupation class the number of children 7-14 with parents living together not at school in 1930-31.

The school non-attendance of the children of wage-earners belonging to families with parents living together accounts for 35,075 out of the 86,793 not at school in all such families. The percentage not at school, *viz.*, 4·35, shows that the attendance among wage-earners is better

than among the non wage-earners. The entries at the foot of the table show that non-wage-earners have 7·05 p.c. non-attendance. Most of these, of course, are rural farm children and Indians. The last entry shows that rural families other than agricultural wage-earners account for 59,283 of the children not at school and that these show 7·81 p.c. non-attendance. As is shown on Map III, it is clear that a certain amount of this is caused by physical environment.

The order of non-attendance among wage-earners' children, beginning at the worst, is as follows:—

LXXXV.—PERCENTAGES OF CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL, IN FAMILIES WITH WAGE-EARNER HEAD LIVING WITH WIFE, BY OCCUPATION GROUP OF HEAD, CANADA, 1931

Occupation Group	P.C. of Children 7-14 Not at School	Occupation Group	P.C. of Children 7-14 Not at School
1. Fishing, hunting, and trapping	14·82	12. Personal service	3·56
2. Logging	13·89	13. Electric light and power production	3·33
3. Farm labourers	8·40	14. Manufacturing	3·11
4. Other unskilled labourers	6·90	15. Railway transportation	2·76
5. Unspecified	4·76	16. Recreational service	2·64
6. Water transportation	4·62	17. Other transportation	2·55
7. Mining and quarrying	4·56	18. Public administration and defence	2·54
8. Agricultural wage-earners other than labourers	4·49	19. Commercial	2·33
9. Road transportation	4·11	20. Clerical	2·22
10. Building and construction	4·02	21. Warehousing and storage	2·16
11. Laundering, cleaning, etc	3·68	22. Professional service	1·99
		23. Finance, insurance	1·42

Remembering the number not at school belonging to all classes between the ages of 7 and 14, *viz.*, 121,279, it will now be pointed out that 70,418 (in the nine provinces) were at ages 10-14. It has also been indicated that a large number of these were at the ages of 13 and 14 when their non-attendance would likely mean that they had left school. It will be interesting now to investigate how many of the 10-14's could have been kept from school by having to work. The Census of the Gainfully Occupied shows that 4,931 of both sexes were gainfully occupied at ages 10-13 and 13,354 at the age of 14 making 18,285 gainfully occupied at ages 10-14. This leaves 52,133 of the 10-14 age group out of school whose absence cannot be explained by gainful employment, in addition to the possibility that some of the 18,000 gainfully occupied may have also attended school.

It is interesting to compare this with the order of illiteracy among the parents of these children as in Table 44, Part II. The two orders compare as follows:—

LXXXVI.—PERCENTAGES OF CHILDREN 7-14 YEARS OF AGE NOT AT SCHOOL, IN FAMILIES WITH WAGE-EARNER HEAD LIVING WITH WIFE, COMPARED WITH PERCENTAGES OF PARENTS ILLITERATE, BY OCCUPATION GROUP OF HEAD, CANADA, 1931

Occupation Group	P.C. of Children 7-14 Not at School	P.C. of Parents Illiterate
All occupations	4·35	3·17
1. Fishing, hunting, and trapping	14·82	18·85
2. Logging	13·89	13·06
3. Farm labourers	8·40	6·94
4. Other unskilled labourers	6·90	8·88
5. Unspecified	4·76	1·05
6. Water transportation	4·62	2·12
7. Mining and quarrying	4·56	5·58
8. Agricultural wage-earners other than labourers	4·49	0·96
9. Road transportation	4·11	1·90
10. Building and construction	4·02	2·05
11. Laundering, cleaning, etc	3·68	3·76
12. Personal service	3·56	1·99
13. Electric light and power production	3·33	1·57
14. Manufacturing	3·11	1·52
15. Railway transportation	2·76	1·61
16. Recreational service	2·64	1·00
17. Other transportation	2·55	0·33
18. Public administration and defence	2·54	0·19
19. Commercial	2·33	0·21
20. Clerical	2·22	0·11
21. Warehousing and storage	2·16	0·39
22. Professional service	1·99	0·11
23. Finance, insurance	1·42	0·07

The following[1] show what occupations have more and what less non-attendance than was to be expected from the illiteracy of the parents:—

Greater than to be expected	Less than to be expected
Logging	Fishing, hunting, and trapping
Farm labourers	Unskilled labourers
Unspecified	Mining and quarrying
Water transportation	Laundering, cleaning, etc.
Agricultural wage-earners other than labourers	Personal service
Road transportation	Manufacturing
Building and construction	Railway transportation
Electric light and power production	Recreational service
Public administration and defence	Other transportation
	Commercial
	Clerical
	Warehousing and storage
	Professional service
	Finance, insurance

It may seem strange that some parents in the professional occupations were found illiterate but in this case it is invariably the wife that is illiterate. There is no doubt left in one's mind that school non-attendance goes with illiteracy of parents. It is, of course, difficult to decide whether it is the illiteracy of the parent or the occupation that is responsible for the non-attendance but there are strong indications that the occupation has an influence apart from the illiteracy of the parent, *e.g.*, farm labourers show greater non-attendance than other labourers although the parents are less illiterate while "agricultural wage-earners other than labourers" has very little illiteracy but comes eighth in the order of non-attendance. Occupations of a more or less itinerant nature such as building and construction, water transportation, etc., show more non-attendance than is to be expected from the illiteracy, while laundering and other stationary occupations show less. On the whole, there is sufficient evidence to justify the conclusion that occupations which call for frequent moving about of families show greater non-attendance and that, therefore, this moving may be considered as one of the factors entering into non-attendance. This, of course, was to be expected. Illiteracy, however, which is decidedly anti-social is undoubtedly the heavier factor.

[1]The expectations in this case were determined on the basis of the measured correlation between the two sets of figures in Statement LXXXVI.

CHAPTER X

YEARS SPENT AT SCHOOL BY THE POPULATION OF THE PRAIRIE PROVINCES AS REPORTED IN THE CENSUS OF 1936

Introduction.—Throughout the previous chapters, when the measurement of that important quantity, the number of years actually attached to or spent at school by the individual was attempted, a note of dissatisfaction may have been apparent arising from the fact that so much, perforce, depended upon inference, upon circumstantial evidence, so to speak. This manifested itself particularly when referring to the time spent at school in the past by the older population as distinguished from those at school age or just past school age in the present. The value of the conclusions reached from these inferences is enormously enhanced if they are based on direct evidence. As was pointed out in the monograph of 1921 when a similar step was undertaken (see appendix to Chapter 15), the values both of the direct and the indirect are thus enhanced. With direct evidence alone the conclusions remain inferences; with only the indirect we reach conclusions that must be forever doubtful. But when we have both direct and indirect evidence and they agree, we can feel confident that our conclusions are justified by the facts and are basically sound. We have both sides of the picture and this is a most useful feature in statistical analysis.

To the end that such direct evidence upon the school attendance of the population as a whole might be obtained, something of an innovation was introduced into the schedules of the 1936 Census of the Prairie Provinces. Heretofore, only the school attainments of the population of school age and actually going to school had been investigated. These have been adequately covered by the Education Statistics of the last seventeen or eighteen years but latterly there has been a necessity arising to know of the incidences of these attainments upon occupational status, unemployment and so on. However, attention here will be confined to only one feature, *viz.*, the time spent at school. It was difficult to devise a census question that would evoke the desired information on actual school attainment. Such questions as "Grade at the time of leaving school?", "university graduate?", "high school graduate?" and so on, had to be abandoned, mainly because such terms are capable of so many interpretations by the enumerated that the information obtained would be useless. The question that seemed to come nearest to the ideal was "Number of years spent at school?" This also may be misinterpreted; the number given in answer (evident from the replies) refers not to the total number of years schooling obtained but to the time the person was attached to the school, *i.e.*, from the time he began until the time he left. Such factors as regularity of attendance and individual ability or intelligence are not taken into account and this has a serious bearing upon attainment. Nevertheless, the number of years spent at school is a certain measure of attainment. This can easily be demonstrated. As a rule a person does not spend 8 or 9 years at school without acquiring a more or less definite educational status. A person who has spent only 6 years at school may have gone farther than one who has spent 8 but this is not the rule—it is the exception. When considering masses the rule is most important. It is well, however, to know the weaknesses of the question even where, as here, these weaknesses are not sufficient to render useless the general picture.

The information, for the individuals answering the question so far, has been compiled by quinquennial age groups, male and female, rural and urban for each of the three Prairie Provinces. The number of years spent at school by those who are now 20-39 years of age obviously refers to persons who were at school age (5-19) somewhere between 1902 and 1935; similarly with other ages. The variations from age to age show schooling at different dates. It is true that for

the immigrant population the "schooling" may not have occurred in Canada. The comparative schooling throughout the age range enables us to obtain a general picture of the population. If this general picture conforms to what we have already drawn from inferences based on the data of static conditions in 1931 (see Chapter VI), it would seem to be good confirmation.

Median Years Spent at School.—Table 45, Part II, shows the median years spent at school of the male and female, rural and urban population of each of the three Prairie Provinces for each quinquennial age group up to 90. It should be understood that this is the time spent at school up to June 1, 1936, and, consequently, that the years for those still of school age are not yet completed. The table clearly shows the age group at which school attendance may be said to be completed, *viz.*, the group 20-24. This age group shows the highest median years attendance. The lower ages will not have completed their school attendance until they reach that age. The computations are non-comparable, therefore, in so far as the ages under 20 are concerned but are comparable for all the subsequent groups.

The persons at ages 20-24 in 1936 were at an age to begin school between 1916 and 1921 and at the age when most persons attend school between 1921 and 1926 while some of them had not completed their schooling until recently. Consequently, they represent the product of the decade 1921-31, a period of probably the greatest activity in the matter of school enforcement laws and other devices for gathering the population into the schools in the history of Canada. The median time at school for this age group (20-24) was as follows:—

	Males	Females
Manitoba	8·7	9·4
Saskatchewan	8·2	8·9
Alberta	8·8	9·8

That is, half the population at the age had spent more than 8·2 years at school in the case showing the lowest and 9·8 years in that showing the highest figure for school attendance. It will be seen that the difference between these two figures is almost entirely a matter of sex, the females showing from 0·7 to 1·0 years more than the males. The difference between provinces is at first sight only slight—about half a year—but slight differences in an average of this kind are significant. In all cases 50 p.c. of the persons had attended sufficiently long to attain high school entrance, while in Alberta the females had attended sufficiently long to cover 2 years of high school.

It will be noticed that these direct figures are essentially the same as those already deduced from the indirect data in 1931, remembering that those who were 20-24 in 1936 were 15-19 in1931.

The table shows important differences between the sexes. It might be surmised that the females evidently had not completed their school career until the ages 20-24 while the males completed it earlier, for the age 15-19 shows the highest school attendance for males. This, we believe, is not the true interpretation. The same factor that made so much difference between the males and females at 20-24 brought about the fact that 15-19 *appears* to be higher for males. When the males now at 15-19 come to the ages 20-24 they will probably show higher figures than they do now. It is a matter of slower reaction to the trend of the times in the education of the sexes. In 1921 the females were remaining at school much longer than the males who were evidently dropping out at 14. Since then the males have been staying longer at school. The same distinction that obtains between male and female also obtains between rural and urban and probably from the same cause.

Improvement.—Let us now trace the improvement that has taken place in length of time at school throughout the years. This can be done by comparing one age group with another. Suppose this is done in ten-year intervals, *i.e.*, comparing standing at 20-24 with that at 30-34 and so on. As already pointed out, those at 20-24 were at ages of maximum attendance in 1926; those at 30-34 were at ages of maximum attendance in 1916 and so on. The periods at school compare as follows:—

LXXXVII.—COMPARISON OF MEDIAN YEARS SPENT AT SCHOOL BY THE AGE GROUPS 20-24 AND 30-34 (REPRESENTING PERIODS OF MAXIMUM ATTENDANCE IN CENSUS YEARS 1926 AND 1916 RESPECTIVELY), BY SEX, RURAL AND URBAN, PRAIRIE PROVINCES, 1936

Item	Median Years Spent at School by Age Group		Difference
	20-24	30-34	
Manitoba—			
Male	8·7	7·9	0·8
Female	9·4	8·4	1·0
Saskatchewan—			
Male	8·2	7·4	0·8
Female	8·9	7·8	1·1
Alberta—			
Male	8·8	7·8	1·0
Female	9·8	8·4	1·4
Manitoba—			
Rural	7·9	7·4	0·5
Urban	10·2	9·1	1·1
Saskatchewan—			
Rural	7·9	7·0	0·9
Urban	10·5	9·1	1·4
Alberta—			
Rural	8·3	7·4	0·9
Urban	10·7	9·5	1·2

The lengthening out of school life in the ten years, then, varied from half a year in rural Manitoba to almost a year and a half in urban Saskatchewan; or from 0·8 years for males in Manitoba and Saskatchewan to a year and a half for females in Alberta. Needless to recall, these are only averages. A lengthening out of 1 year in the period comes very near to describing the situation. This is essentially the same as the conclusion already reached through deduction in Chapter VI. It must be remembered that all these figures evidently refer to the years attached to the school and do not necessarily mean that they had this much schooling, *i.e.*, that they attended all the time during the years so attached. In the comparison of the two periods a great deal depends upon the regularity of attendance. For example, if the figure measuring this regularity, *viz.*, percentage in average attendance, was 60 in 1916 and 80 in 1926, then it is easy to see that the real difference was much greater than shown. Again, for example, if we take the Manitoba females with 9·4 years in 1926 and 8·4 years in 1916 and multiply them respectively by 0·80 and 0·60, we have 7·52 and 5·04 years respectively of actual schooling, a difference of almost two and one-half years. So far we have learned very little new from these figures except that they corroborate previous deductions.

If we now look down the line we notice that the greatest differences, *i.e.*, the greatest improvement, took place in very recent periods—say, within the last fifteen years. Taking the 1-year lengthening out of school life already mentioned, we notice that in no case previous to the age group 30-34 (taken as representing 1916) have we a similar lengthening out in thirty years and in only a few cases in thirty-five years. This may well mean that there was more lengthening out of the school life between 1916 and 1926 than occurred between 1886 and 1916. We cannot be certain of this but appearances point towards it. The explanation is not to be found in what happened in the three provinces; likely most of the pre-30-34-year-old persons were not born in these provinces. Probably it is not a question of what happened in any country; it may be merely a manifestation of different degrees of selectivity in the case of the persons arriving at different periods. Thus, the persons who were old in 1936 might have been from countries in which the population was comparatively well educated although not as well as those going to school in the Prairie Provinces in 1926 while persons who were younger in 1936 may have been largely from less favoured countries.

Probably bearing out in part what has just been said but more probably merely a reflection on pioneer days, we observe that the persons who were 40-44 or even 35-44 in 1936, especially the males, had not spent as much time at school as those older and younger. It was observed in Chapter III that more illiteracy was shown by these groups (five years younger) in 1931 and that

this occurred among the Canadian born. It is easy to see that these were the persons at school age in the early part of the century when school accommodation could not keep pace with the growth of population. This corroborated still another conclusion from inference.

A further point of interest is the evidence of the average lengthening of school life due to attending after the age of compulsory attendance (15). This evidence can be obtained by comparing the average time spent at school of the 20-24-year-olds as compared with the averages of the 10-14- and 15-19-year-olds as follows:—

LXXXVIII.—COMPARISON OF YEARS SPENT AT SCHOOL BY THE AGE GROUP 20-24 WITH AVERAGE OF GROUPS 10-14 AND 15-19, BY SEX, RURAL AND URBAN, PRAIRIE PROVINCES, 1936

Item	Years Spent at School by Age Group		Difference
	Average of 10-14 and 15-19	20-24	
Manitoba—			
Male	7·4	8·7	1·3
Female	7·6	9·4	1·8
Saskatchewan—			
Male	7·1	8·2	1·1
Female	7·4	8·9	1·5
Alberta—			
Male	7·4	8·8	1·4
Female	7·7	9·8	2·1
Manitoba—			
Rural	6·9	7·9	1·0
Urban	8·1	10·2	2·1
Saskatchewan—			
Rural	6·9	7·9	1·0
Urban	8·1	10·5	2·4
Alberta—			
Rural	7·0	8·3	1·3
Urban	8·2	10·7	2·5

Generally speaking the lengthening of school life is about a year and a half, of which part is undoubtedly obscured by a trend, so that about 2 years would probably be a more adequate estimate. In other words, of the total time spent at school of about 8½ years, approximately 2 years is due to attendance after age of compulsory attendance. How much of these 2 years could be rendered unnecessary by more regular attendance during the more normal ages of attendance is food for thought and has already been discussed in Chapter VI.

The differences between rural and urban localities are apt to mislead. We must always remember that the urban population contains many persons who were either in other countries or in rural residence at the time of going to school. Consequently, the only ages at which adequate comparisons can be made of the rural and urban as such are the present school ages. At 10-14 we notice that the difference is about half a year; at 15-19 it is more than one year. Generally the differences are greater among the older persons but, as just intimated, this has very little significance. It would seem to be fairly conclusive that, save for the superior high school advantages of the urban, the real rural and urban differences in school attendance amount to about half a year caused by a later start evident from a comparison of rural and urban at ages 5-9.

Dispersion of Years Spent at School.—So far we have considered averages as measured by the median. An average, while giving a more or less definite idea of general tendencies, fails to give what are perhaps the more important aspects of the subject. For most purposes we are not so much concerned with the average years spent at school as with the departures from this average in the numbers and proportion who never went to school, those who attended for a period insufficient to give them a working education, those who attended long enough to give them a high school education and so on. Table 46, Part II, is intended to supply these items of information as it shows by quinquennial ages for each of the three provinces, rural and urban, the percentages attending different periods. Those who were never at school ("0 years") should represent approximately the illiterate portion, those attending less than 5 years can hardly be considered as having

attained to a standing sufficient to prevent them from lapsing into illiteracy or semi-illiteracy; those attending more than 8 years should have gone beyond high school entrance while those attending more than 13 years should have passed beyond high school. Needless to say, there must be exceptional cases in these groups. Some with 4 years attendance may possibly have reached high school work. Some with 13 years may never have gone beyond elementary grade while some who never entered school may be well educated. All these, however, are sure to be very exceptional and, on the whole, the period of attendance is highly representative of attainment.

As in the case of Table 45, it is necessary to point out the non-comparability of the data on quinquennial ages owing to the fact that up to the age of 20, school attendance was incomplete. Consequently, such a figure as percentage attending at "all ages" is meaningless. What does matter is the comparison at the different age groups after 20.

Let us first consider the proportion who never went to school. In this case we might expect that we could safely begin with the group 10-14, for the person should be at school by the age of 10 if he is ever to be there. We find, however, that this is not so. The comparison between those at 10-14 and those at 15-19 in percentage never at school is as follows:—

LXXXIX.—COMPARISON OF PERCENTAGES NEVER ATTENDING SCHOOL, FOR AGE GROUPS 10-14 AND 15-19, RURAL AND URBAN, PRAIRIE PROVINCES, 1936

Province	Percentages Never Attending School by Age Group		Difference
	10-14	15-19	
Manitoba—			
Rural	1·91	1·56	0·35
Urban	0·39	0·35	0·04
Saskatchewan—			
Rural	1·44	1·10	0·34
Urban	0·42	0·47	—0·05
Alberta—			
Rural	1·90	1·30	0·60
Urban	0·31	0·24	0·07

With the exception of urban Saskatchewan we find a larger proportion not having attended school at 10-14 than at 15-19. Of course, this could happen in two ways. The population at 10-14 during the five years preceding the census might be less "school inclined" than the population of the five previous years or it might mean that the schools had not gathered in their full quota of the population at 10-14, *i.e.*, that some who were 10-14 in 1936 would attend later. The assumption is that the latter is the true interpretation, although it seems strange that this should be true of urban residents or even of rural residents in the present advanced stage of settlement. In fact, it is rather startling that at the age when the schools must have gathered in their full quota (15-19) as many as 156 per 10,000 were never at school by the year 1936. Who these were may be revealed when occupational distribution by years at school is compiled.

Reviewing the succession of ages in each of the provinces, it is easy to see that the figures for "0 years" at school are quite comparable with figures of illiteracy. There is the same steady increase from younger to older persons reflecting the school conditions when each group was at school age. The point raised about the ages around 40 (*i.e.*, those who were of school age in pioneer days) is not so clearly brought out in this table as in other tables discussed.

Coming to those who actually went to school but attended less than 5 years, it is rather striking that the age group showing the lowest percentage of these was the 15-19 group, in spite of the fact that this was not the age when the highest median attendance was shown (see Table 47) but the following age group, 20-24.

In the case of these short-attendance populations we observe, also, a fairly steady increase with older ages. The one point that seems more important than all others is that at the age when the average attendance is greatest (20-24) the proportions of the population either never at school or at school less than five years compare with the data at ages 30-34 (*i.e.*, persons ten years older or representing conditions ten years earlier) and those 40-44 as follows:—

XC.—COMPARISON OF PERCENTAGES ATTENDING SCHOOL LESS THAN FIVE YEARS, FOR CERTAIN AGE GROUPS, RURAL AND URBAN, PRAIRIE PROVINCES, 1936

Province	Percentages Attending School Less Than Five Years by Age Group			Difference	
	20-24 (1)	30-34 (2)	40-44 (3)	Col. 2—Col. 1	Col. 3—Col. 2
Manitoba—					
Rural	9·16	18·89	23·58	9·73	4·69
Urban	2·35	10·48	13·90	8·13	3·42
Saskatchewan—					
Rural	5·77	21·90	23·44	16·13	1·54
Urban	2·31	10·48	11·00	8·17	0·52
Alberta—					
Rural	5·96	18·35	19·38	12·39	1·03
Urban	1·60	7·60	8·29	6·00	0·69

In no case was the progress between the preceding decade anywhere within reach of the progress in the last decade. Long periods at school are clearly a product of the last twenty years. In fact the same story is shown here that has already been discussed when dealing with the average time at school.

The High School and Post-High School Periods.—When we come to the proportion attending school sufficiently long to have done high school work or more, we meet somewhat the same story, but referring to those who were 9-12 years at school rather than those 13 years or more. The figures for the latter do not progress to the same extent with the periods indicated by the ages. At the age showing the longest attendance (20-24) the proportions 9 or more years at school were as follows:—

XCI.—COMPARISON OF PERCENTAGES ATTENDING SCHOOL NINE YEARS OR MORE, FOR AGE GROUPS 20-24 AND 30-34, RURAL AND URBAN, PRAIRIE PROVINCES, 1936

Province	Percentages Attending School Nine Years or More by Age Group		Difference
	20-24	30-34	
Manitoba—			
Rural	35·22	29·79	5·43
Urban	68·51	51·41	17·10
Saskatchewan—			
Rural	33·59	22·23	11·36
Urban	68·61	50·89	17·72
Alberta—			
Rural	41·00	28·46	12·54
Urban	73·51	55·96	17·55

Even the rural population attend sufficiently long to enable more than a third of the population to have some high school education while the urban population could have two-thirds so educated. The greatest differences between rural and urban seem to be found in this instance. The progress by 1936 over the previous ten years is very marked.

Generally, the most striking feature of the data showing years spent at school is the lengthening out of the time at school in the last ten years. The part due to the depression is difficult to measure but no doubt it is considerable. This seems to be the interpretation of the fact that the lengthening was much more pronounced among the urban than the rural population.

There is great social significance in the fact that from one-third (rural) to two-thirds (urban) are attending school sufficiently long to have received some high school education. This means that secondary education is no longer confined to a select population—very far from it. When we look down—say, to the 60-year-olds—we notice that less than 23 p.c. of the rural population attended school 9 years or more, while of the 80-year-olds only 15 p.c. attended this long. From an educational point of view we are indeed living in a new world.

PART III

TABLE 1. Number and percentage illiterate of the population 10 years of age and over, including and excluding Indians, by sex, rural and urban, Canada and provinces, 1931

No.	Province	Population 10 Years and over—Inclusive of					
		Total			Illiterate		
					No.		
		Both Sexes	Male	Female	Both Sexes	Male	Female
1	**CANADA**	**8,169,622**	**4,258,862**	**3,910,760**	**309,396**	**183,827**	**125,569**
2	Rural	3,664,696	2,025,105	1,639,591	204,471	123,498	80,973
3	Urban	4,504,926	2,233,757	2,271,169	104,925	60,329	44,596
4	**Prince Edward Island**	**69,333**	**35,907**	**33,426**	**1,835**	**1,110**	**725**
5	Rural	51,506	27,401	24,105	1,409	876	533
6	Urban	17,827	8,506	9,321	426	234	192
7	**Nova Scotia**	**402,401**	**207,098**	**195,303**	**17,139**	**10,195**	**6,944**
8	Rural	219,953	117,159	102,794	12,031	7,450	4,581
9	Urban	182,448	89,939	92,509	5,108	2,745	2,363
10	**New Brunswick**	**310,316**	**159,102**	**151,124**	**21,440**	**13,925**	**7,515**
11	Rural	207,335	110,402	96,933	19,114	12,592	6,522
12	Urban	102,981	48,700	54,281	2,326	1,333	993
13	**Quebec**	**2,167,517**	**1,091,418**	**1,076,099**	**103,212**	**67,760**	**35,452**
14	Rural	759,006	403,234	355,772	57,378	40,393	16,985
15	Urban	1,408,511	688,184	720,327	45,834	27,367	18,467
16	**Ontario**	**2,791,072**	**1,423,989**	**1,367,083**	**64,157**	**38,544**	**25,613**
17	Rural	1,061,594	580,348	481,246	33,543	21,439	12,104
18	Urban	1,729,478	843,641	885,837	30,614	17,105	13,509
19	**Manitoba**	**557,806**	**296,095**	**261,711**	**24,876**	**11,992**	**12,884**
20	Rural	293,734	163,504	130,230	18,591	9,165	9,426
21	Urban	264,072	132,591	131,481	6,285	2,827	3,458
22	**Saskatchewan**	**705,350**	**390,105**	**315,245**	**29,097**	**14,289**	**14,808**
23	Rural	472,518	269,890	202,628	24,416	11,720	12,696
24	Urban	232,832	120,215	112,617	4,681	2,569	2,112
25	**Alberta**	**572,129**	**319,840**	**252,289**	**19,669**	**9,763**	**9,906**
26	Rural	344,469	201,766	142,703	16,144	7,850	8,294
27	Urban	227,660	118,074	109,586	3,525	1,913	1,612
28	**British Columbia**	**583,135**	**328,983**	**254,152**	**23,088**	**13,753**	**0,335**
29	Rural	245,256	145,955	99,301	16,999	9,540	7,459
30	Urban	337,879	183,028	154,851	6,089	4,213	1,876
31	**Yukon**	**3,542**	**2,475**	**1,067**	**802**	**393**	**409**
32	Rural	2,304	1,596	708	765	370	395
33	Urban	1,238	879	359	37	23	14
34	**Northwest Territories**	**7,021**	**3,850**	**3,171**	**4,081**	**2,103**	**1,978**
35	Rural	7,021	3,850	3,171	4,081	2,103	1,978
36	Urban	-	-	-	-	-	-

TABLE 1. Number and percentage illiterate of the population 10 years of age and over, including and excluding Indians, by sex, rural and urban, Canada and provinces, 1931

Indians			Population 10 Years and over—Exclusive of Indians									No.
Illiterate			Total			Illiterate						
P.C.						No.			P.C.			
Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	
3·79	4·32	3·21	8,082,324	4,213,727	3,868,597	275,088	167,210	107,878	3·40	3·97	2·79	1
5·58	6·10	4·94	3,581,086	1,981,704	1,599,382	170,641	107,117	53,524	4·77	5·41	3·97	2
2·33	2·70	1·96	4,501,238	2,232,023	2,269,215	104,447	60,093	44,354	2·32	2·69	1·95	3
2·65	3·09	2·17	69,170	35,827	33,343	1,787	1,094	693	2·58	3·05	2·08	4
2·74	3·20	2·21	51,347	27,325	24,022	1,363	852	501	2·65	3·15	2·09	5
2·39	2·75	2·06	17,823	8,502	9,321	424	232	192	2·38	2·73	2·06	6
4·26	4·92	3·56	400,797	206,251	194,546	10,704	9,984	6,720	4·17	4·84	3·45	7
5·47	6·36	4·45	218,385	116,322	102,063	11,600	7,240	4,360	5·31	6·22	4·27	8
2·80	3·05	2·55	182,412	89,929	92,483	5,104	2,744	2,350	2·80	3·05	2·55	9
0·91	8·75	4·97	309,127	158,468	150,659	21,140	13,765	7,375	6·84	8·69	4·90	10
9·22	11·41	6·73	206,189	109,789	96,400	18,824	12,439	6,385	9·13	11·33	6·62	11
2·26	2·74	1·83	102,938	48,679	54,259	2,316	1,326	990	2·25	2·72	1·82	12
4·76	6·21	3·29	2,158,700	1,080,862	1,071,844	100,537	66,304	34,233	4·66	6·10	3·19	13
7·56	10·02	4·77	750,522	398,822	351,700	54,747	38,962	15,785	7·29	9·77	4·49	14
3·25	3·98	2·56	1,408,184	688,040	720,144	45,790	27,342	18,448	3·25	3·97	2·56	15
2·30	2·71	1·87	2,769,006	1,412,413	1,356,593	58,556	35,930	22,626	2·11	2·54	1·67	16
3·16	3·59	2·52	1,041,633	559,794	471,839	28,110	18,901	9,209	2·70	3·32	1·95	17
1·77	2·03	1·52	1,727,373	842,619	884,754	30,445	17,029	13,417	1·75	2·02	1·52	18
4·46	4·05	4·92	547,134	290,617	256,517	21,227	10,226	11,001	3·88	3·52	4·29	19
6·33	5·61	7·24	283,253	158,115	125,138	14,992	7,424	7,568	5·29	4·70	6·05	20
2·38	2·13	2·63	263,881	132,502	131,379	6,235	2,802	3,433	2·36	2·11	2·61	21
4·13	3·66	4·70	694,818	384,762	310,056	24,006	11,800	12,206	3·46	3·07	3·94	22
5·17	4·34	6·27	452,244	264,657	197,587	19,388	9,257	10,131	4·19	3·50	5·13	23
2·01	2·14	1·88	232,574	120,105	112,469	4,618	2,543	2,075	1·99	2·12	1·84	24
3·44	3·05	3·93	561,583	314,354	247,229	14,738	7,386	7,352	2·62	2·35	2·97	25
4·59	3·89	5·81	334,329	195,472	137,857	11,311	5,525	5,785	3·38	2·81	4·20	25
1·55	1·62	1·47	227,254	117,882	109,372	3,427	1,850	1,557	1·51	1·58	1·43	27
3·96	4·18	3·67	565,294	319,760	245,534	14,502	9,673	4,829	2·57	3·12	1·97	28
6·93	5·54	7·51	227,516	135,822	90,794	8,429	5,458	2,951	3·70	4·00	3·26	29
1·80	2·30	1·21	337,578	182,938	154,740	5,073	4,025	1,868	1·80	2·30	1·21	30
22·04	15·88	38·33	2,479	1,944	535	80	50	30	3·23	2·57	5·61	31
33·20	23·18	55·79	1,358	1,117	241	66	40	26	4·86	3·58	10·79	32
2·99	2·62	3·90	1,121	827	294	14	10	4	1·25	1·21	1·36	33
58·13	54·62	62·38	4,210	2,469	1,741	1,811	998	813	43·02	40·42	46·70	34
58·13	54·62	62·38	4,210	2,469	1,741	1,811	998	813	43·02	40·42	46·70	35
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TABLE 2. Number and percentage illiterate of the population 10 years of age and over arranged in descending order of percentage illiterate, Canada, by counties or census divisions, 1931

Rank	County or Census Division	Population 10 Years and over			
		Total		Illiterate	
		No.	P.C.	No.	P.C.
	TOTAL	**8,169,622**	**100·00**	**309,396**	**3·79**
1	Northwest Territories	7,021	0·09	4,081	58·13
2	Division No. 18, Sask	4,396	0·05	2,284	51·96
3	Yukon	3,542	0·04	802	22·64
4	Division No. 17, Alta	4,133	0·05	907	21·95
5	District of Patricia, Ont	2,890	0·04	596	20·62
6	Madawaska, N.B	17,022	0·21	3,298	19·37
7	Saguenay, Que	15,007	0·18	2,904	19·35
8	Gloucester, N.B	29,344	0·36	5,514	18·79
9	Division No. 16, Man	23,293	0·29	3,773	16·20
10	Labelle, Que	13,997	0·17	2,088	14·92
11	Richmond, N.S	8,647	0·11	1,236	14·29
12	Pontiac, Que	15,813	0·19	2,210	13·98
13	Gaspé, Que	31,931	0·39	4,225	13·23
14	Kent, N.B	17,058	0·21	2,241	13·14
15	Papineau, Que	21,583	0·26	2,715	12·58
16	Restigouche, N.B	21,132	0·26	2,641	12·50
17	Division No. 13, Alta	17,797	0·22	2,141	12·03
18	Division No. 9, Sask	45,688	0·56	5,463	11·96
19	Division No. 7, B.C	10,230	0·13	1,169	11·43
20	Division No. 13, Man	18,617	0·23	2,088	11·22
21	Division No. 8, B.C	17,226	0·21	1,867	10·84
22	Division No. 12, Man	18,711	0·23	2,005	10·72
23	Hull, Que	46,759	0·57	4,867	10·41
24	Charlevoix, Que	16,207	0·20	1,667	10·29
25	Prescott, Ont	18,397	0·23	1,882	10·23
26	Division No. 14, Man	19,527	0·24	1,976	10·12
27	Huntingdon, Que	9,674	0·12	957	9·89
28	Division No. 6, B.C	24,689	0·30	2,438	9·87
29	Division No. 9, B.C	15,343	0·19	1,493	9·73
30	Bonaventure, Que	22,902	0·28	2,086	9·11
31	Inverness, N.S	16,421	0·20	1,492	9·09
32	Guysborough, N.S	12,182	0·15	1,078	8·85
33	Montcalm, Que	10,242	0·13	879	8·58
34	Russell, Ont	13,545	0·17	1,125	8·31
35	Bellechasse, Que	15,437	0·19	1,265	8·19
36	Northumberland, N.B	25,399	0·31	2,073	8·16
37	Division No. 10, B.C	5,528	0·07	451	8·16
38	Glengarry, Ont	14,560	0·18	1,151	7·91
39	Berthier, Que	14,606	0·18	1,147	7·85
40	Division No. 15, Alta	10,090	0·12	791	7·84
41	Nipissing, Ont	30,382	0·37	2,380	7·83
42	Kenora, Ont	17,154	0·21	1,339	7·81
43	Division No. 1, Man	16,381	0·20	1,270	7·75
44	Digby, N.S	14,440	0·18	1,114	7·71
45	Division No. 2, B.C	33,312	0·41	2,513	7·54
46	Abitibi, Que	15,871	0·19	1,193	7·52
47	Division No. 10, Alta	43,467	0·53	3,226	7·42
48	Division No. 5, Man	35,524	0·43	2,623	7·38
49	Joliette, Que	20,264	0·25	1,479	7·30
50	L'Assomption, Que	11,579	0·14	843	7·28
51	Sudbury, Ont	44,157	0·54	3,185	7·21
52	Frontenac, Que	17,388	0·21	1,229	7·07
53	Victoria, N.S	6,418	0·08	453	7·06
54	Terrebonne, Que	28,516	0·35	1,992	6·99
55	Montmagny, Que	14,645	0·18	1,018	6·95
56	Argenteuil, Que	14,414	0·18	984	6·83
57	Manitoulin, Ont	8,340	0·10	568	6·81
58	Témiscouata, Que	34,889	0·43	2,350	6·74
59	Kamouraska, Que	17,031	0·21	1,137	6·68
60	Mégantic, Que	25,104	0·31	1,675	6·67
61	Cochrane, Ont	43,181	0·53	2,837	6·57
62	Renfrew, Ont	40,632	0·50	2,648	6·52
63	Yarmouth, N.S	16,360	0·20	1,067	6·52
64	Temiskaming, Que	14,695	0·18	957	6·51
65	Stormont, Ont	25,178	0·31	1,626	6·46
66	Rimouski, Que	22,936	0·28	1,480	6·45
67	Matane, Que	30,624	0·37	1,971	6·44
68	Victoria, N.B	10,710	0·13	688	6·42
69	Division No. 10, Sask	31,251	0·38	1,994	6·38
70	Chicoutimi, Que	37,054	0·45	2,341	6·32
71	Division No. 16, Sask	37,151	0·45	2,338	6·29
72	Deux-Montagnes, Que	10,878	0·13	670	6·16
73	Thunder Bay, Ont	52,198	0·64	3,194	6·12
74	Maskinongé, Que	11,687	0·14	706	6·04
75	Division No. 15, Man	7,483	0·09	452	6·04
76	Division No. 14, Alta	29,139	0·36	1,722	5·91
77	Laprairie, Que	10,174	0·12	599	5·89
78	L'Islet, Que	13,822	0·17	813	5·88
79	Chateauguay, Que	10,288	0·13	599	5·82
80	Richelieu, Que	16,474	0·20	950	5·77
81	Lac-St-Jean, Que	33,155	0·41	1,906	5·75

TABLE 2. Number and percentage illiterate of the population 10 years of age and over arranged in descending order of percentage illiterate, Canada, by counties or census divisions, 1931—Con.

Rank	County or Census Division	Population 10 Years and over			
		Total		Illiterate	
		No.	P.C.	No.	P.C.
82	Lotbinière, Que.	16,579	0·20	945	5·70
83	Division No. 10, Man.	13,987	0·17	788	5·63
84	Yamaska, Que.	12,309	0·15	687	5·58
85	Division No. 17, Sask.	20,721	0·25	1,150	5·55
86	Montmorency, Que.	12,182	0·15	672	5·52
87	Westmorland, N.B.	44,351	0·54	2,423	5·46
88	Napierville, Que.	5,720	0·07	312	5·45
89	Vaudreuil, Que.	9,262	0·11	498	5·38
90	Queens, N.S.	8,422	0·10	453	5·38
91	Dorchester, Que.	19,662	0·24	1,054	5·36
92	Wolfe, Que.	11,823	0·14	629	5·32
93	Beauce, Que.	30,884	0·38	1,633	5·29
94	Rainy River, Ont.	13,438	0·16	708	5·27
95	Division No. 16, Alta.	20,948	0·26	1,074	5·13
96	Division No. 3, B.C.	33,180	0·41	1,697	5·11
97	Shefford, Que.	21,343	0·26	1,086	5·09
98	Champlain, Que.	42,402	0·52	2,154	5·08
99	Compton, Que.	16,491	0·20	825	5·00
100	Algoma, Ont.	36,280	0·44	1,815	5·00
101	Antigonish, N.S.	8,216	0·10	410	4·99
102	Division No. 15, Sask.	61,793	0·76	3,050	4·94
103	Verchères, Que.	9,521	0·12	465	4·88
104	Arthabaska, Que.	19,795	0·24	948	4·79
105	Brome, Que.	9,909	0·12	467	4·71
106	Portneuf, Que.	25,926	0·32	1,214	4·68
107	Richmond, Que.	18,294	0·22	856	4·68
108	Drummond, Que.	19,238	0·24	894	4·65
109	Bagot, Que.	12,556	0·15	583	4·64
110	Soulanges, Que.	6,836	0·08	311	4·55
111	Stanstead, Que.	19,428	0·24	868	4·47
112	St-Hyacinthe, Que.	20,487	0·25	915	4·47
113	St-Maurice, Que.	49,789	0·61	2,220	4·46
114	Cape Breton, N.S.	69,426	0·85	3,034	4·37
115	Parry Sound, Ont.	19,965	0·24	872	4·37
116	Beauharnois, Que.	19,759	0·24	840	4·25
117	Nicolet, Que.	21,044	0·26	884	4·20
118	St-Jean, Que.	13,715	0·17	576	4·20
119	Sherbrooke, Que.	29,258	0·36	1,219	4·17
120	Jesus Island, Que.	12,433	0·16	517	4·16
121	Lunenburg, N.S.	25,356	0·31	1,052	4·15
122	Division No. 14, Sask.	34,422	0·42	1,404	4·08
123	Division No. 2, Man.	27,928	0·34	1,102	3·95
124	Lennox, Ont.	10,012	0·12	395	3·95
125	Division No. 5, B.C.	103,018	1·26	4,005	3·89
126	Division No. 5, Sask.	41,172	0·50	1,588	3·86
127	Prince, P.E.I.	24,388	0·30	919	3·77
128	Rouville, Que.	10,523	0·13	380	3·61
129	Missisquoi, Que.	15,375	0·19	546	3·55
130	Simcoe, Ont.	68,369	0·84	2,389	3·49
131	Albert, N.B.	6,036	0·07	209	3·46
132	Sunbury, N.B.	5,323	0·07	183	3·44
133	Hastings, Ont.	46,810	0·57	1,599	3·42
134	Muskoka, Ont.	16,649	0·20	569	3·42
135	Division No. 1, B.C.	18,388	0·23	626	3·40
136	Iberville, Que.	7,181	0·09	241	3·36
137	Quebec, Que.	130,544	1·60	4,367	3·35
138	Halifax, N.S.	79,191	0·97	2,556	3·23
139	Shelburne, N.S.	9,756	0·12	308	3·16
140	Division No. 11, Man.	22,089	0·27	694	3·14
141	Division No. 2, Sask.	33,102	0·41	1,034	3·12
142	Timiskaming, Ont.	28,831	0·35	894	3·10
143	Haliburton, Ont.	4,525	0·06	140	3·09
144	Division No. 9, Man.	36,006	0·44	1,087	3·02
145	Division No. 7, Man.	30,332	0·37	905	2·98
146	Division No. 12, Sask.	31,881	0·39	931	2·92
147	Kings, N.S.	19,228	0·24	559	2·91
148	Division No. 2, Alta.	44,724	0·55	1,281	2·86
149	Lévis, Que.	26,406	0·32	747	2·83
150	Cumberland, N.S.	28,848	0·35	799	2·77
151	Chambly, Que.	21,021	0·26	578	2·75
152	Division No. 9, Alta.	19,148	0·23	522	2·73
153	Division No. 8, Alta.	47,951	0·59	1,303	2·72
154	Division No. 8, Sask.	37,261	0·46	1,004	2·69
155	Kings, P.E.I.	15,027	0·18	402	2·68
156	Division No. 3, Sask.	34,643	0·42	892	2·57
157	Division No. 1, Sask.	32,345	0·40	816	2·52
158	Essex, Ont.	124,816	1·53	3,127	2·51
159	Frontenac, Ont.	37,782	0·46	945	2·50
160	Division No. 6, Sask.	86,669	1·06	2,141	2·47
161	Division No. 11, Alta.	101,381	1·24	2,492	2·46
162	Addington, Ont.	5,487	0·07	133	2·42
163	Division No. 13, Sask.	32,039	0·39	755	2·36
164	Annapolis, N.S.	13,256	0·16	306	2·31

TABLE 2. Number and percentage illiterate of the population 10 years of age and over arranged in descending order of percentage illiterate, Canada, by counties or census divisions, 1931—Con.

Rank	County or Census Division	Population 10 Years and over			
		Total		Illiterate	
		No.	P.C.	No.	P.C.
165	Kent, Ont.	50,422	0·62	1,149	2·28
166	Division No. 1, Alta.	22,784	0·28	519	2·28
167	Montreal Island, Que.	804,176	9·84	18,179	2·26
168	Carleton, Ont.	138,614	1·70	3,126	2·26
169	Division No. 6, Man.	236,132	2·89	5,265	2·23
170	Lincoln, Ont.	44,560	0·55	966	2·17
171	Division No. 4, B.C.	322,221	3·94	6,829	2·12
172	Brant, Ont.	44,259	0·54	929	2·10
173	Division No. 12, Alta.	10,549	0·13	222	2·10
174	Division No. 5, Alta.	20,391	0·25	410	2·01
175	Hants, N.S.	14,965	0·18	297	1·98
176	Division No. 8, Man.	16,117	0·20	313	1·94
177	Division No. 4, Sask.	21,547	0·26	402	1·87
178	Division No. 6, Alta.	115,237	1·41	2,157	1·87
179	Division No. 3, Alta.	11,622	0·14	215	1·85
180	Norfolk, Ont.	25,390	0·31	468	1·84
181	St. John, N.B.	50,062	0·61	912	1·82
182	Welland, Ont.	66,222	0·81	1,198	1·81
183	Pictou, N.S.	31,420	0·38	569	1·81
184	Haldimand, Ont.	17,614	0·22	317	1·80
185	Colchester, N.S.	19,849	0·24	356	1·79
186	Queens, N.B.	8,748	0·11	155	1·77
187	Division No. 7, Sask.	49,254	0·60	852	1·73
188	Queens, P.E.I.	29,918	0·37	514	1·72
189	Division No. 3, Man.	20,924	0·26	354	1·69
190	Kings, N.B.	15,885	0·19	269	1·67
191	Dundas, Ont.	13,139	0·16	215	1·64
192	Leeds, Ont.	29,264	0·36	467	1·60
193	Carleton, N.B.	16,254	0·20	258	1·59
194	Lanark, Ont.	27,033	0·33	424	1·57
195	Grenville, Ont.	13,559	0·17	210	1·55
196	York, N.B.	25,785	0·32	393	1·52
197	Wentworth, Ont.	156,535	1·92	2,365	1·51
198	Northumberland, Ont.	25,883	0·32	389	1·50
199	Grey, Ont.	47,112	0·58	686	1·46
200	Bruce, Ont.	34,715	0·42	496	1·43
201	Division No. 11, Sask.	70,015	0·86	999	1·43
202	Division No. 4, Alta.	23,229	0·28	330	1·42
203	Prince Edward, Ont.	13,777	0·17	190	1·38
204	Ontario, Ont.	48,433	0·59	625	1·29
205	Lambton, Ont.	44,594	0·55	572	1·28
206	Waterloo, Ont.	72,788	0·89	897	1·23
207	Division No. 4, Man.	14,755	0·18	181	1·23
208	Division No. 7, Alta.	29,539	0·36	357	1·21
209	Dufferin, Ont.	12,364	0·15	150	1·21
210	York, Ont.	713,886	8·74	8,260	1·16
211	Peterborough, Ont.	35,857	0·44	401	1·12
212	Charlotte, N.B.	17,207	0·21	183	1·06
213	Durham, Ont.	21,445	0·26	228	1·06
214	Middlesex, Ont.	99,549	1·22	1,002	1·01
215	Elgin, Ont.	36,319	0·44	349	0·96
216	Peel, Ont.	23,281	0·28	221	0·95
217	Victoria, Ont.	21,461	0·26	202	0·94
218	Oxford, Ont.	39,716	0·49	349	0·88
219	Wellington, Ont.	47,780	0·58	415	0·87
220	Perth, Ont.	42,219	0·52	350	0·83
221	Huron, Ont.	37,631	0·46	292	0·78
222	Halton, Ont.	22,073	0·27	132	0·60

TABLE 3. Percentages illiterate of the population 10 years of age and over, by quinquennial age groups, sex, rural and urban, Canada and provinces, 1931

Age Group	Date at Which Each Group Was Ages 10-14	P.C. Illiterate			
		Rural		Urban	
		Males	Females	Males	Females
CANADA[1]	-	5·99[2]	4·81	2·70	1·96
10–14	1931	1·86	1·53	0·39	0·33
15–19	1926	2·90	1·84	0·71	0·63
20–24	1921	3·91	3·00	1·25	1·15
25–29	1916	4·66	4·08	2·21	1·56
30–34	1911	5·27	4·30	2·53	1·64
35–39	1906	5·72	4·93	2·75	1·97
40–44	1901	6·23	5·34	3·06	2·24
45–49	1896	7·23	6·03	3·51	2·58
50–54	1891	8·16	6·93	3·89	2·77
55–59	1886	10·17	8·24	4·83	3·35
60–64	1881	11·44	9·47	5·27	3·83
65–69	1876	13·65	11·54	6·51	4·93
70–74	1871	16·24	13·92	8·50	6·01
75–79	1866	18·33	14·87	9·98	7·13
80–84	1861	19·56	16·89	10·83	8·07
85–89	1856	21·96	18·88	12·15	8·79
90–94	1851	25·88	25·21	13·75	10·60
95–99	1846	32·14	35·09	19·39	18·12
100 and over	1841 and earlier	59·18	56·90	36·00	29·03
Prince Edward Island		3·20	2·21	2·75	2·06
10–14		0·80	0·53	0·39	0·39
15–19		1·36	0·85	1·15	0·92
20–24		2·52	1·30	1·29	0·63
25–29		2·10	1·84	2·12	1·08
30–34		2·35	1·56	1·83	1·05
35–39		3·08	1·12	2·25	1·90
40–44		2·62	1·35	2·39	0·88
45–49		3·94	1·81	2·55	1·52
50–54		3·68	2·56	3·87	2·89
55–59		5·17	2·55	4·19	4·09
60–64		4·77	4·02	6·06	4·56
65–69		6·01	5·46	7·59	6·17
70–74		8·27	5·32	8·13	4·42
75–79		10·22	7·77	6·59	6·60
80–84		8·99	9·81	8·73	9·65
85–89		6·08	9·00	11·11	7·94
90–94		8·33	15·52	25·00	22·22
95–99		11·11	15·38	-	50·00
100 and over		-	25·00	-	50·00
Nova Scotia		6·36	4·46	3·05	2·55
10–14		2·12	1·68	0·40	0·38
15–19		3·50	1·50	0·86	0·68
20–24		4·68	2·36	1·52	1·10
25–29		5·38	3·20	2·39	1·85
30–34		5·74	3·16	2·90	1·82
35–39		5·87	3·36	3·35	2·69
40–44		6·40	3·50	4·47	2·97
45–49		7·29	4·23	4·68	4·06
50–54		8·19	4·75	4·87	4·24
55–59		8·54	5·95	6·41	4·61
60–64		9·70	7·25	5·12	5·03
65–69		11·02	8·55	6·91	5·87
70–74		12·38	11·56	7·25	8·38
75–79		16·03	13·62	8·71	8·24
80–84		15·63	18·83	7·06	11·78
85–89		18·36	21·74	12·40	11·41
90–94		16·76	23·08	10·14	15·45
95–99		34·78	33·33	40·00	24·14
100 and over		37·50	46·15	-	25·00

[1]Nine provinces only.

[2]Totals for Canada and provinces include "not stated" ages.

TABLE 3. Percentages illiterate of the population 10 years of age and over, by quinquennial age groups, sex, rural and urban, Canada and provinces, 1931—Con.

Age Group	P.C. Illiterats			
	Rural		Urban	
	Males	Females	Males	Females
New Brunswick	**11·41**	**6·73**	**2·74**	**1·83**
10–14	4·21	2·95	0·46	0·36
15–19	7·93	3·58	1·14	0·78
20–24	10·21	4·91	1·93	1·11
25–29	10·35	5·15	2·43	1·58
30–34	10·30	4·93	2·37	1·30
35–39	11·51	6·55	2·94	1·95
40–44	13·88	7·09	3·42	1·96
45–49	14·86	9·15	3·54	2·71
50–54	15·30	10·04	4·11	2·89
55–59	17·51	11·60	4·16	3·45
60–54	16·30	11·43	4·48	3·20
65–59	18·48	13·19	5·40	3·58
70–74	22·40	15·81	6·79	4·40
75–79	20·05	16·92	8·36	4·73
80–84	20·53	18·51	7·10	4·60
85–89	21·36	18·70	5·07	5·73
90–94	26·00	26·50	12·50	11·59
95–99	47·83	22·22	14·29	-
100 and ovsr	60·00	-	-	-
Quebec	**10·02**	**4·77**	**3·98**	**2·56**
10–14	2·30	1·55	0·63	0·53
15–19	4·33	1·90	1·16	0·88
20–24	5·42	2·44	1·60	1·20
25–29	6·46	2·85	2·28	1·36
30–34	7·91	3·22	2·73	1·57
35–39	9·32	2·60	3·44	1·95
40–44	11·40	4·98	4·17	2·63
45–49	14·15	5·70	5·45	3·37
50–54	16·55	7·28	6·37	4·34
55–59	20·93	9·36	8·84	5·40
60–64	24·05	11·85	10·57	7·00
65–59	27·86	15·58	13·48	9·16
70–74	32·53	20·05	18·92	11·41
75–79	36·02	22·32	22·17	13·98
80–84	38·37	24·62	24·44	15·35
85–89	38·86	26·64	27·05	17·03
90–94	44·96	34·83	31·03	16·85
95–99	36·17	50·00	31·37	28·36
100 and over	-	42·86	75·00	57·14
Ontario	**3·69**	**2·52**	**2·03**	**1·52**
10–14	1·07	0·91	0·21	0·18
15–19	1·72	1·20	0·45	0·43
20–24	2·59	1·81	0·95	1·03
25–29	3·17	2·32	2·38	1·53
30–34	3·37	2·26	2·50	1·53
35–39	3·74	2·37	2·35	1·77
40–44	4·07	2·65	2·40	1·94
45–49	4·80	2·88	2·63	2·00
50–54	4·74	3·18	2·73	1·83
55–59	5·55	3·48	3·01	2·10
50–64	5·64	3·64	2·80	2·13
65–69	7·03	4·61	3·48	2·56
70–74	8·26	5·90	4·51	3·42
75–79	8·62	6·78	4·95	3·87
80–84	8·61	7·56	5·31	4·19
85–89	11·98	8·74	5·35	4·60
90–94	12·90	12·25	6·14	6·83
95–99	19·74	20·51	13·89	12·78
100 and over	50·00	57·14	25·00	21·43
Manitoba	**5·61**	**7·24**	**2·13**	**2·63**
10–14	1·75	1·77	0·32	0·25
15–19	2·33	2·17	0·42	0·71
20–24	3·23	3·83	0·83	1·53
25–29	4·24	5·19	1·49	2·12
30–34	5·04	6·67	1·98	2·21
35–39	5·53	8·46	2·27	3·41
40–44	5·93	9·55	2·71	4·03
45–49	7·19	10·39	3·45	4·37
50–54	8·55	13·15	3·33	4·59
55–59	10·59	15·29	3·98	4·90
60–64	11·85	18·69	4·02	4·78
65–59	15·92	21·96	5·63	6·22
70–74	17·47	24·53	4·83	6·03
75–79	19·72	21·58	5·41	6·73
80–84	21·45	22·80	5·65	5·12
85–89	24·81	28·87	9·55	8·25
90–94	39·29	45·45	10·34	5·45
95–99	50·00	33·33	12·50	30·00
100 and over	100·00	100·00	40·00	-

TABLE 3. Percentages illiterate of the population 10 years of age and over, by quinquennial age groups, sex, rural and urban, Canada and provinces, 1931—Con.

Age Group	P.C. Illiterate			
	Rural		Urban	
	Males	Females	Males	Females
Saskatchewan	**4·34**	**6·27**	**2·14**	**1·88**
10-14	1·36	1·33	0·29	0·36
15-19	1·72	1·67	0·38	0·54
20-24	2·83	3·62	1·54	1·20
25-29	4·32	6·42	2·10	2·00
30-34	4·85	7·04	2·55	2·04
35-39	4·29	8·20	2·39	2·08
40-44	4·22	8·17	2·29	1·88
45-49	4·81	9·36	2·48	2·29
50-54	5·49	10·41	2·76	2·35
55-59	7·69	14·34	3·47	3·73
60-64	9·64	16·80	4·35	3·98
65-69	14·11	21·27	4·94	7·20
70-74	17·98	25·92	7·53	8·60
75-79	21·66	24·03	8·44	8·74
80-84	21·10	27·50	7·02	8·33
85-89	30·69	29·72	17·02	8·85
90-94	43·40	51·72	17·39	17·24
95-99	35·71	56·00	-	20·00
100 and over	87·50	66·67	100·00	-
Alberta	**3·89**	**5·81**	**1·62**	**1·47**
10-14	1·50	1·35	0·28	0·20
15-19	1·78	1·65	0·49	0·45
20-24	2·67	3·83	1·03	1·19
25-29	3·50	5·96	1·95	2·02
30-34	4·04	6·68	2·33	1·83
35-39	4·07	6·75	2·11	1·90
40-44	3·49	6·64	2·00	1·46
45-49	4·02	7·61	1·68	1·60
50-54	4·96	9·90	2·07	1·59
55-59	6·55	12·43	1·95	2·40
60-64	8·60	15·97	2·50	2·48
65-69	10·60	18·20	2·66	4·31
70-74	14·00	21·37	3·38	4·27
75-79	14·07	18·77	5·08	4·91
80-84	17·67	26·22	5·18	4·92
85-89	18·57	31·20	5·76	7·86
90-94	24·24	55·56	13·64	6·45
95-99	30·77	63·64	-	-
100 and over	75·00	75·00	-	-
British Columbia	**6·54**	**7·51**	**2·30**	**1·21**
10-14	3·06	2·75	0·28	0·22
15-19	2·64	3·48	0·35	0·36
20-24	3·98	5·78	1·02	1·13
25-29	4·81	7·84	1·72	1·51
30-34	6·11	7·07	2·12	1·79
35-39	6·92	8·38	2·72	1·55
40-44	7·11	7·39	3·37	1·50
45-49	7·09	8·10	3·34	1·59
50-54	7·97	8·86	3·54	1·23
55-59	8·54	10·44	3·57	1·28
60-64	10·97	12·42	3·65	1·46
65-69	10·47	16·09	2·87	1·66
70-74	11·46	17·52	2·93	1·55
75-79	15·63	22·10	3·23	1·67
80-84	19·14	23·81	2·48	2·46
85-89	28·00	36·42	0·99	3·10
90-94	39·13	32·50	-	4·76
95-99	50·00	91·67	-	9·09
100 and over	83·33	80·00	-	-

TABLE 4. Number and percentage illiterate of the population 10 years of age and over, by broad racial and age groups, sex, rural and urban, Canada and provinces, 1931

Item	10-14 Years						15 Years and over					
	Males			Females			Males			Females		
	Total	Illiterate		Total	Illiterate		Total	Illiterate		Total	Illiterate	
		No.	P.C.		No.	P.C.		No.	P.C.		No.	P.C.
CANADA	542,192	6,184	1·14	530,455	4,928	0·93	3,710,345	175,147	4·72	3,376,067	118,254	3·50
Rural	*276,979*	*5,157*	*1·86*	*264,907*	*4,044*	*1·53*	*1,748,680*	*115,868*	*6·65*	*1,570,805*	*74,556*	*5·44*
British races	122,163	798	0·65	114,253	566	0·50	881,876	15,751	1·79	705,690	7,572	1·07
Other races	154,816	4,359	2·82	150,654	3,478	2·31	860,804	100,117	11·63	665,115	66,984	10·07
Urban	*265,213*	*1,027*	*0·39*	*265,548*	*884*	*0·33*	*1,967,665*	*59,279*	*3·01*	*2,005,262*	*43,698*	*2·18*
British races	139,058	288	0·21	137,121	262	0·19	1,112,067	7,269	0·65	1,189,908	6,225	0·52
Other races	126,155	739	0·59	128,427	622	0·48	855,598	52,010	6·08	815,354	37,473	4·60
Prince Edward Island	4,790	34	0·71	4,615	23	0·50	31,117	1,076	3·46	28,811	702	2·44
Rural	*3,770*	*30*	*0·80*	*3,587*	*19*	*0·53*	*25,651*	*846*	*3·58*	*20,518*	*514*	*2·51*
British races	3,162	20	0·63	3,008	11	0·37	20,109	455	2·26	17,485	249	1·42
Other races	608	10	1·64	579	8	1·38	3,522	391	11·10	3,033	265	8·74
Urban	*1,020*	*4*	*0·39*	*1,028*	*4*	*0·39*	*7,486*	*230*	*3·07*	*8,293*	*188*	*2·27*
British races	828	2	0·24	833	3	0·36	6,270	136	2·17	7,001	118	1·69
Other races	192	2	1·04	195	1	0·51	1,216	94	7·73	1,292	70	5·42
Nova Scotia	28,662	396	1·38	27,876	309	1·11	178,436	9,799	5·49	167,427	6,635	3·96
Rural	*16,377*	*347*	*2·12*	*15,624*	*262*	*1·68*	*100,782*	*7,105*	*7·05*	*87,170*	*4,319*	*4·95*
British races	11,587	163	1·41	10,811	112	1·04	73,064	3,063	4·19	64,090	1,949	3·04
Other races	4,790	184	3·84	4,813	150	3·12	27,718	4,040	14·58	23,080	2,370	10·27
Urban	*12,285*	*49*	*0·40*	*12,252*	*47*	*0·38*	*77,654*	*2,696*	*3·47*	*80,257*	*2,316*	*2·89*
British races	9,987	34	0·34	9,928	30	0·30	63,025	1,455	2·31	66,788	1,374	2·06
Other races	2,298	15	0·65	2,324	17	0·73	14,629	1,241	8·48	13,469	942	6·99
New Brunswick	23,756	759	3·19	23,052	513	2·23	135,346	13,166	9·73	128,162	7,002	5·46
Rural	*17,301*	*729*	*4·21*	*16,591*	*490*	*2·95*	*93,101*	*11,863*	*12·74*	*80,542*	*6,039*	*7·51*
British races	9,427	158	1·68	8,682	101	1·16	56,486	2,162	3·83	48,385	826	1·71
Other races	7,874	571	7·25	7,909	389	4·92	36,615	9,701	26·49	31,957	5,206	16·29
Urban	*6,455*	*30*	*0·46*	*6,461*	*23*	*0·36*	*42,245*	*1,303*	*3·08*	*47,620*	*970*	*2·03*
British races	4,639	10	0·22	4,601	9	0·20	32,635	383	1·17	37,035	260	0·70
Other races	1,816	20	1·10	1,860	14	0·75	9,610	920	9·57	10,785	710	6·58
Quebec	158,149	2,120	1·34	157,660	1,565	0·99	933,269	65,640	7·03	918,439	33,887	3·69
Rural	*67,285*	*1,549*	*2·30*	*65,154*	*1,077*	*1·65*	*335,949*	*38,844*	*11·56*	*290,618*	*15,908*	*5·47*
British races	4,882	144	2·95	4,632	80	1·73	36,129	2,003	5·54	27,828	771	2·77
Other races	62,403	1,405	2·25	60,522	997	1·65	299,820	36,841	12·29	262,790	15,137	5·76
Urban	*90,864*	*571*	*0·63*	*92,506*	*488*	*0·53*	*597,320*	*25,796*	*4·49*	*627,821*	*17,979*	*2·86*
British races	14,356	46	0·32	14,078	43	0·31	122,685	989	0·81	132,335	824	0·62
Other races	76,508	525	0·69	78,428	445	0·57	474,635	25,807	5·44	495,486	17,155	3·46
Ontario	161,623	933	0·58	156,634	755	0·48	1,262,366	37,611	2·98	1,210,449	24,858	2·05
Rural	*69,158*	*742*	*1·07*	*65,255*	*593*	*0·91*	*511,210*	*20,697*	*4·05*	*415,991*	*11,511*	*2·77*
British races	48,299	189	0·39	45,195	141	0·31	371,046	6,155	1·66	314,273	2,730	0·87
Other races	20,839	553	2·65	20,060	452	2·25	140,164	14,542	10·37	101,718	8,781	8·63
Urban	*92,485*	*191*	*0·21*	*91,379*	*162*	*0·18*	*751,156*	*16,914*	*2·25*	*794,458*	*13,347*	*1·68*
British races	66,872	108	0·16	65,499	79	0·12	559,128	3,298	0·59	625,347	2,658	0·43
Other races	25,613	83	0·32	25,880	83	0·32	192,028	13,616	7·09	169,111	10,689	6·32
Manitoba	38,968	460	1·18	37,519	433	1·15	257,127	11,532	4·48	224,192	12,451	5·55
Rural	*23,541*	*411*	*1·75*	*22,293*	*395*	*1·77*	*139,903*	*8,754*	*6·25*	*107,937*	*9,031*	*8·37*
British races	9,716	27	0·28	9,013	36	0·40	68,988	522	0·76	52,609	293	0·56
Other races	13,825	384	2·78	13,280	359	2·70	70,975	8,232	11·60	55,328	8,738	15·79
Urban	*15,427*	*49*	*0·32*	*15,226*	*38*	*0·25*	*117,164*	*2,778*	*2·37*	*116,255*	*3,420*	*2·94*
British races	8,894	19	0·21	8,792	16	0·18	71,920	290	0·40	73,502	270	0·37
Other races	6,533	30	0·46	6,434	22	0·34	45,244	2,488	5·50	42,753	3,150	7·37
Saskatchewan	55,606	589	1·06	54,430	569	1·05	334,499	13,700	4·10	260,815	14,239	5·40
Rural	*39,952*	*549*	*1·36*	*38,468*	*512*	*1·33*	*229,988*	*11,177*	*4·86*	*164,165*	*12,184*	*7·42*
British races	15,285	45	0·29	14,224	49	0·34	98,309	620	0·63	68,192	305	0·45
Other races	24,667	498	2·02	24,239	463	1·91	131,629	10,557	8·02	95,973	11,879	12·38
Urban	*15,654*	*40*	*0·29*	*15,967*	*57*	*0·36*	*104,561*	*2,523*	*2·41*	*96,650*	*2,055*	*2·13*
British races	10,079	19	0·19	10,230	37	0·36	66,975	291	0·43	64,026	247	0·39
Other races	5,575	27	0·48	5,737	20	0·35	37,586	2,232	5·94	32,624	1,808	5·54
Alberta	40,458	430	1·06	39,026	363	0·93	279,382	9,333	3·34	213,263	9,543	4·47
Rural	*25,990*	*389*	*1·50*	*24,769*	*334*	*1·35*	*175,776*	*7,461*	*4·24*	*117,934*	*7,960*	*6·75*
British races	11,011	30	0·27	10,134	17	0·17	78,660	439	0·56	53,298	227	0·43
Other races	14,979	359	2·40	14,635	317	2·17	97,116	7,022	7·23	64,636	7,733	11·96
Urban	*14,468*	*41*	*0·28*	*14,257*	*29*	*0·20*	*103,606*	*1,872*	*1·81*	*95,329*	*1,583*	*1·66*
British races	10,274	14	0·14	10,041	15	0·15	70,998	158	0·22	68,453	170	0·25
Other races	4,194	27	0·64	4,216	14	0·33	32,608	1,714	5·26	26,876	1,413	5·26
British Columbia	30,180	463	1·53	29,643	398	1·34	298,803	13,290	4·45	224,509	8,937	3·98
Rural	*13,925*	*417*	*3·06*	*13,171*	*362*	*2·75*	*132,330*	*9,125*	*6·89*	*86,130*	*7,097*	*8·24*
British races	8,794	22	0·25	8,554	19	0·22	79,085	332	0·42	59,530	229	0·37
Other races	4,831	395	8·18	4,617	343	7·43	53,245	8,791	16·51	26,600	6,875	25·85
Urban	*16,555*	*46*	*0·28*	*16,472*	*36*	*0·22*	*166,473*	*4,167*	*2·50*	*138,379*	*1,840*	*1·33*
British races	13,129	36	0·27	13,119	30	0·23	118,431	269	0·23	115,421	304	0·26
Other races	3,426	10	0·29	3,353	6	0·18	48,042	3,898	8·11	22,958	1,536	6·69

TABLE 5. Number and percentage illiterate of the population 10 years of age and over, by birthplace, Canada, 1931

Birthplace	Population 10 Years and over			Birthplace	Population 10 Years and over		
	Total	Illiterate			Total	Illiterate	
		No.	P.C.			No.	P.C.
Canada[1]	5,853,410	174,607	2·98	Iceland	5,714	137	2·40
England	711,006	2,786	0·39	Italy	41,528	6,174	14·87
Scotland	271,915	780	0·29	Lithuania	5,343	637	11·92
Ireland	104,345	812	0·78	Norway	31,719	615	1·94
Wales	21,299	50	0·23	Poland	161,736	27,300	16·88
Lesser Isles	5,347	42	0·79	Roumania	38,956	7,198	18·48
Australia	3,410	22	0·65	Russia	109,765	11,964	10·90
India	4,527	360	7·95	Spain	559	28	5·01
Newfoundland	25,524	1,201	4·71	Sweden	33,793	609	1·80
New Zealand	1,352	9	0·67	Switzerland	5,940	106	1·78
South Africa	2,177	3	0·14	Ukraine	13,128	2,805	21·37
West Indies	4,454	47	1·06	Yugoslavia	15,766	1,713	10·87
Other British Possessions	2,186	72	3·29	Other Europe	2,756	144	5·22
Austria	36,741	6,763	18·41	Armenia	625	133	21·28
Belgium	16,190	716	4·42	China	41,876	7,550	18·03
Bulgaria	1,435	156	10·87	Japan	12,124	1,794	14·80
Czechoslovakia	21,065	2,136	10·14	Syria	3,886	774	19·92
Denmark	16,370	253	1·55	Turkey	901	115	12·76
Finland	29,509	2,428	8·23	Other Asia	759	76	10·01
France	16,369	475	2·90	United States	317,119	4,164	1·31
Germany	37,314	1,499	4·02	South America	1,190	29	2·44
Greece	5,527	539	9·75	Other countries	1,566	102	6·51
Holland	10,051	200	1·99	At sea	676	14	2·07
Hungary	25,805	2,666	10·33				

[1]Nine provinces only and exeluding aborigines. Obviously the aborigines and the Yukon and the Northwest Territories (mainly aborigines) should be exeluded from Canada in the comparison since the other countries are not sending out their aborigines.

TABLE 6. Number and percentage illiterate of the population 10 years of age and over, by age group and sex, Canada, 1931, compared with the United States, 1930 and Bulgaria, 1926

Age Group	Population 10 Years and over								
	Canada, 1931 Census			United States, 1930 Census			Bulgaria, 1926 Census		
	Total	Illiterate		Total	Illiterate		Total	Illiterate	
		No.	P.C.		No.	P.C.		No.	P.C.
BOTH SEXES[1]	**8,169,622**	**309,396**	**3·79**	**98,723,047**	**4,283,753**	**4·34**	**4,128,788**	**1,624,141**	**39·34**
10–14	1,074,051	12,010	1·12	12,004,877	140,440	1·17	564,502	108,659	19·25
15–19	1,039,591	16,253	1·56	11,552,115	221,942	1·92	603,581	148,939	24·68
20–24	911,185	20,645	2·27	10,870,378	294,360	2·71	528,722	138,898	26·27
25–34	1,495,117	46,901	3·14	18,954,029	618,266	3·26	789,882	253,528	32·10
35–44	1,334,562	51,337	3·85	17,198,840	887,955	5·16	603,728	272,024	45·06
45–54	1,073,892	52,906	4·93	13,018,083	864,433	6·64	411,938	235,371	57·14
55–64	661,622	45,688	6·91	8,396,898	606,811	7·23	330,615	219,834	66·49
65 and over	575,831	63,118	10·96	6,633,805	642,966	9·69	295,727	246,843	83·47
Male[1]	**4,258,862**	**183,827**	**4·32**	**49,949,798**	**2,198,293**	**4·40**	**2,056,012**	**512,440**	**24·92**
10–14	542,930	6,673	1·23	6,068,777	82,030	1·35	290,145	46,472	16·02
15–19	525,250	9,924	1·89	5,757,825	140,632	2·44	306,442	56,914	18·57
20–24	463,722	12,074	2·60	5,336,815	173,019	3·24	263,359	43,801	16·63
25–34	778,111	27,815	3·57	9,421,966	323,919	3·44	390,033	62,787	16·10
35–44	706,844	30,347	4·29	8,816,319	433,510	4·92	287,042	57,899	20·17
45–54	588,845	32,392	5·50	6,803,569	441,883	6·49	197,068	59,735	30·31
55–64	356,072	27,902	7·84	4,367,500	303,907	6·96	172,693	78,061	45·20
65 and over	294,377	36,359	12·35	3,325,211	296,105	8·90	149,178	106,753	71·56
Female[1]	**3,910,760**	**125,569**	**3·21**	**48,773,249**	**2,085,460**	**4·28**	**2,072,776**	**1,111,701**	**53·63**
10–14	531,121	5,337	1·00	5,936,100	58,410	0·98	274,357	62,187	30·97
15–19	514,341	6,329	1·23	5,794,290	81,310	1·40	297,139	92,025	22·67
20–24	447,463	8,571	1·92	5,533,563	121,341	2·19	265,363	95,097	35·84
25–34	717,006	19,086	2·66	9,532,063	294,347	3·09	399,849	190,741	47·70
35–44	627,718	20,990	3·34	8,382,521	454,445	5·42	316,686	214,125	67·61
45–54	485,047	20,514	4·23	6,214,514	422,550	6·80	214,870	175,636	81·74
55–64	305,550	17,786	5·82	4,029,398	302,904	7·52	157,922	141,773	89·77
65 and over	281,454	26,759	9·51	3,308,594	346,861	10·48	146,549	140,090	95·59

[1]"Are not stated" ineluded in totals.

TABLE 7. Number and percentage illiterate of the population 10 years of age and over, rural and urban, Canada and the United States at latest census dates

Item	Population 10 Years and over		
	Total	Illiterate	
		No.	P.C.
CANADA, 1931			
TOTAL	**8,169,622**	**309,396**	**3·79**
Rural	3,664,696	204,471	5·58
Urban	4,504,926	104,925	2·33
UNITED STATES, 1930			
TOTAL	**98,723,047**	**4,283,753**	**4·34**
Rural	41,605,725	2,483,149	5·97
Urban	57,117,322	1,800,604	3·15

TABLE 8. Scatter diagram showing frequency distribution of 500 cases of percentage illiteracy arranged in intervals and ascending order of size, by intervals of percentage improvement in five years from date of occurrence of percentage illiteracy, Canada, 1931

Intervals of Percentage Illiteracy	Intervals of Percentage Improvement																		
	−16+	−15–12	−11–8	−7–4	−3–0	0–3	4–7	8–11	12–15	16–19	20–23	24–27	28–31	32–35	36–39	40–43	44–47	48+	Total
Under 2	7	2		1	4	5	2	4	9	9	9	11	5	9	9	10	7	22	125
2– 3	4	2	4	8	6	12	16	15	8	16	14	9	2	7	4	3	2		132
4– 5	2	1	1	1	6	7	12	11	11	7	11	7	5	2			1		85
6– 7	2		2		3	2	4	8	8	4	10	2							45
8– 9	4	1		1	3	1	2	5	4	6	3	1	2						33
10–11		1		1	2	1		4	4	3	3	4							23
12–13							1	1	1	1	3	1	1						9
14–15						2	1	1	4	2	3								13
16–17				1	1			4		1	3								10
18–19								1	3	1			1						6
20–21		1			1	1	1	2	1	1									8
22–23			1				1	2											4
24–25		1		1					2										4
26–27									1										1
28–29																			
30 and over							1	1											2
Total	19	9	8	14	26	31	41	59	56	51	59	35	16	18	13	13	10	22	500

TABLE 9. Number and percentage illiterate of the population 5 years of age and over, by quinquennial age groups[1], Canada, 1931 and 1921

Age Group	Population 10 Years and over					
	1931			1921		
	Total	Illiterate		Total	Illiterate	
		No.	P.C.		No.	P.C.
TOTAL 10 YEARS AND OVER	**8,169,622**	**309,396**	**3·79**	**6,681,706**	**340,895**	**5·10**
10-14	1,074,547	12,031	1·12	916,004	18,602	2·03
15-19	1,040,072	16,282	1·57	804,341	22,117	2·75
20-24	911,607	20,681	2·27	713,441	24,933	3·49
25-29	786,645	23,618	3·00	688,667	26,900	3·91
30-34	709,164	23,366	3·29	654,930	28,943	4·42
35-39	688,781	25,254	3·67	634,385	32,344	5·10
40-44	646,398	26,173	4·05	528,785	31,190	5·90
45-49	585,482	27,329	4·56	436,402	28,086	6·44
50-54	488,906	25,670	5·25	363,099	26,032	7·17
55-59	367,194	23,980	6·53	281,191	23,698	8·43
60-64	294,733	21,788	7·39	240,041	22,094	9·20
65-69	231,240	20,901	9·04	172,544	19,753	11·45
70-74	171,679	18,933	11·03	117,798	15,475	13·14
75-79	98,674	12,346	12·51	71,576	11,091	15·50
80-84	49,193	6,770	13·76	37,719	6,180	16·38
85 and over	25,307	4,274	16·89	20,783	3,457	16·63
5-9	1,132,749	358,281	31·63	1,048,694	374,090	35·67
Total 5 years and over	**9,302,371**	**667,677**	**7·18**	**7,730,400**	**714,985**	**9·25**

[1] "Age not stated" divided proportionately between all age groups over 10. Age groups estimated for 1921.

TABLE 10. Actual and expected population alive, and number and percentage illiterate, by quinquennial age groups[1], Canada, 1931

Age Group	Expected on Basis of 1921			Actual		
	Population, 1931	Illiterate		Population, 1931	Illiterate	
		No.	P.C.		No.	P.C.
TOTAL 15 YEARS AND OVER	**7,067,448**	**650,048**	**9·20**	**7,095,075**	**297,365**	**4·19**
15-19	1,030,446	367,560	35·67	1,040,072	16,282	1·57
20-24	894,935	18,167	2·03	911,607	20,681	2·27
25-29	780,693	21,469	2·75	786,645	23,618	3·00
30-34	689,398	24,059	3·49	709,164	23,366	3·29
35-39	662,222	25,892	3·91	688,781	25,254	3·67
40-44	626,178	27,677	4·42	646,398	26,173	4·05
45-49	601,396	30,671	5·10	585,482	27,329	4·56
50-54	493,462	29,114	5·90	488,906	25,670	5·25
55-59	396,383	25,527	6·44	367,194	23,980	6·53
60-64	315,061	22,589	7·17	294,733	21,788	7·39
65-69	225,880	19,041	8·43	231,240	20,901	9·04
70-74	171,749	15,800	9·20	171,679	18,933	11·03
75-79	103,664	11,869	11·45	98,674	12,346	12·51
80-84	51,595	6,779	13·14	49,193	6,770	13·76
85-89	18,402	2,852	15·50	19,137	2,956	15·45
90-94	4,997	818	16·38	4,934	941	19·07
95 and over	987	164	16·63	1,236	377	30·50
Total 20 years and over	**6,037,002**	**282,488**	**4·68**	**6,055,003**	**281,083**	**4·64**

[1] "Age not stated" divided proportionately between all age groups over 10.

TABLE 11. Immigrant population and number arriving between 1921 and 1931, Canada, 1931

Age Group	Immigrant Population		Age Group	Immigrant Population	
	Total	Arriving 1921-1931[1]		Total	Arriving 1921-1931[1]
ALL AGES	**2,317,497**	**754,787**	50-54	190,193	19,313
			55-59	126,827	11,325
0- 4	22,830	22,830	60-64	93,939	7,402
5- 9	61,708	61,708	65-69	66,484	5,047
10-14	68,659	52,243	70-74	44,722	2,846
15-19	95,297	58,298	75-79	25,095	1,377
20-24	195,205	101,488	80-84	12,489	505
25-29	256,950	136,903	85-89	5,016	196
30-34	262,375	118,543	90-94	1,379	27
35-39	269,949	76,195	95-99	325	9
40-44	269,416	47,655	100 and over	62	1
45-49	247,790	30,924	Not stated	787	248

[1] "Year not stated" divided proportionately between all age groups.

TABLE 12. Number and percentage illiterate of the population 10 years of age and over, by certain age groups and sex, Canada and provinces, 1931 and 1921

Age Group	Population 10 Years and over					
	Total		Illiterate			
			No.		P.C.	
	1931	1921[1]	1931	1921[1]	1931	1921[1]
CANADA—						
Males	*4,258,862*	*3,467,590*	*183,827*	*198,661*	*4·32*	*5·73*
10–14	542,930	461,282	6,673	10,031	1·23	2·17
15–20	620,016	475,657	12,266	15,533	1·98	3·27
21–34	1,147,067	969,408	37,547	42,690	3·27	4·40
35–64	1,651,761	1,335,298	90,641	96,761	5·49	7·25
65 and over	294,377	214,357	36,359	30,987	12·35	14·46
Not stated	2,711	11,588	341	2,659	12·58	22·95
Females	*3,910,760*	*3,214,116*	*125,569*	*142,254*	*3·21*	*4·43*
10–14	531,121	451,805	5,337	8,289	1·00	1·83
15–20	608,964	472,682	7,944	10,979	1·30	2·32
21–34	1,069,846	934,521	26,042	32,129	2·43	3·44
35–64	1,418,315	1,140,701	59,290	64,204	4·18	5·63
65 and over	281,454	204,733	26,759	24,121	9·51	11·78
Not stated	1,060	9,674	197	2,512	18·58	25·97
Prince Edward Island—						
Males	*35,907*	*35,031*	*1,110*	*1,251*	*3·09*	*3·57*
10–14	4,790	4,826	34	71	0·71	1·47
15–20	5,431	5,245	73	96	1·34	1·83
21–34	8,475	8,218	190	204	2·24	2·48
35–64	12,782	12,353	467	502	3·65	4·06
65 and over	4,425	4,368	346	377	7·82	8·63
Not stated	4	21	–	1	–	4·76
Females	*33,425*	*34,192*	*725*	*878*	*2·17*	*2·55*
10–14	4,615	4,569	23	45	0·50	0·98
15–20	4,986	4,987	42	37	0·84	0·74
21–34	7,395	8,306	103	80	1·39	0·96
35–64	12,142	12,173	265	349	2·18	2·87
65 and over	4,285	4,134	292	361	6·81	8·73
Not stated	3	23	–	1	–	4·35
Nova Scotia—						
Males	*207,098*	*205,528*	*10,195*	*11,533*	*4·92*	*5·61*
10–14	28,662	29,291	396	660	1·38	2·25
15–20	32,183	30,485	765	942	2·38	3·09
21–34	50,227	52,589	1,952	2,155	3·89	4·10
35–64	75,801	74,376	4,730	5,279	6·24	7·10
65 and over	20,149	18,562	2,346	2,477	11·64	13·34
Not stated	76	225	6	20	7·89	8·89
Females	*195,303*	*198,048*	*6,944*	*9,093*	*3·56*	*4·59*
10–14	27,876	27,974	309	509	1·11	1·82
15–20	30,502	30,725	350	521	1·15	1·70
21–34	46,808	52,027	1,041	1,371	2·22	2·64
35–64	69,589	67,792	2,932	3,658	4·21	5·40
65 and over	20,490	19,328	2,306	3,011	11·25	15·58
Not stated	38	202	6	23	15·79	11·39
New Brunswick—						
Males	*159,102*	*148,959*	*13,925*	*13,768*	*8·75*	*9·24*
10–14	23,756	22,196	759	1,241	3·19	5·59
15–20	25,944	23,151	1,645	1,717	6·34	7·42
20–34	38,752	38,328	2,985	2,876	7·70	7·50
35–64	56,629	52,787	6,204	5,983	10·96	11·33
65 and over	13,974	12,263	2,329	1,938	16·67	15·80
Not stated	47	234	3	13	6·38	5·56
Females	*151,214*	*143,084*	*7,515*	*8,449*	*4·97*	*5·90*
10–14	23,052	21,580	513	846	2·23	3·92
15–20	24,614	22,981	647	816	2·63	3·55
21–34	38,123	38,497	1,381	1,566	3·62	4·07
35–64	52,045	48,086	3,383	3,672	6·50	7·64
65 and over	13,359	11,701	1,590	1,541	11·90	13·17
Not stated	21	239	1	8	4·76	3·35

[1]The 1921 Canada total contains the total for the Royal Canadian Navy (485) which does not appear in any of the provinces.

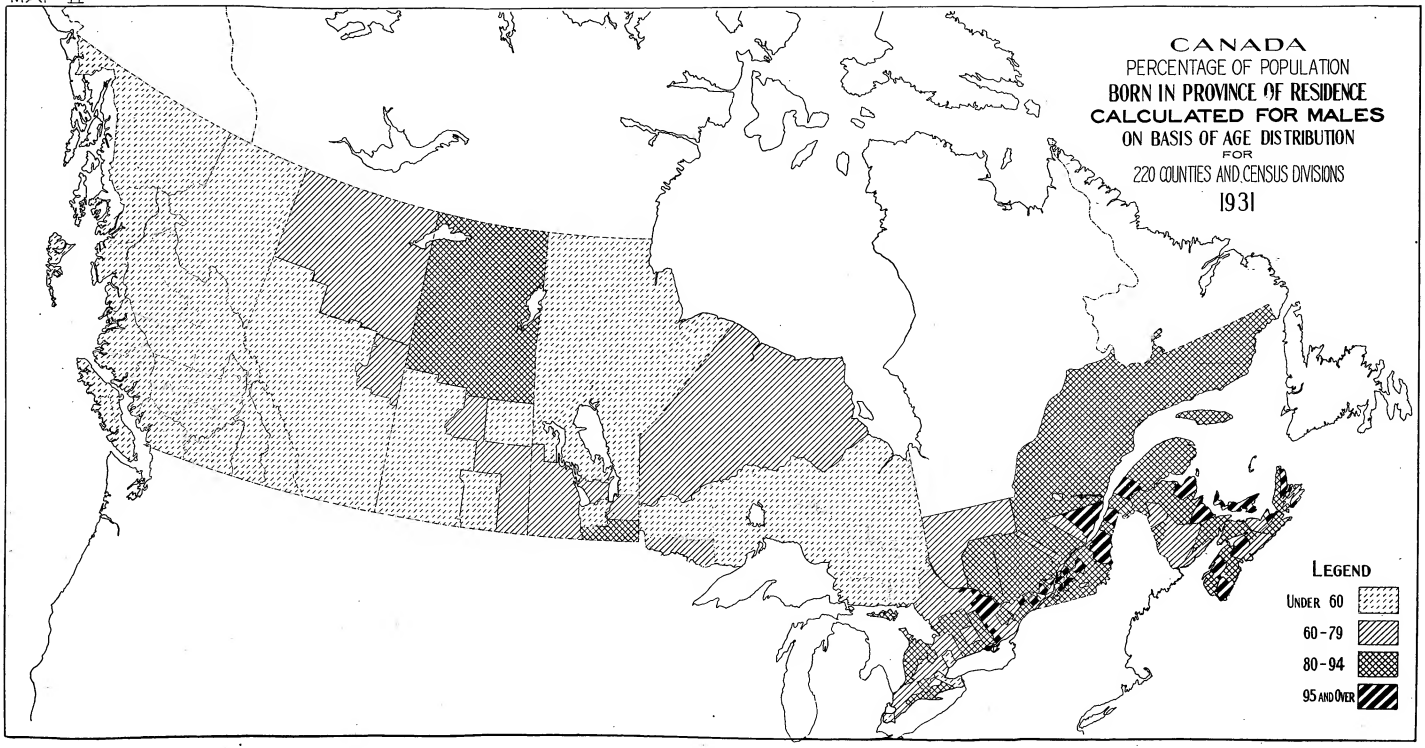
TABLE 12. Number and percentage illiterate of the population 10 years of age and over, by certain age groups and sex, Canada and provinces, 1931 and 1921—Con.

Age Group	Population 10 Years and over					
	Total		Illiterate			
			No.		P.C.	
	1931	1921	1931	1921	1931	1921
Quebec—						
Males	*1,091,418*	*868,171*	*67,760*	*68,108*	*6·21*	*7·84*
10–14	158,149	137,340	2,120	2,706	1·34	1·97
15–20	174,319	140,736	4,461	4,873	2·56	3·46
21–34	315,290	238,598	11,609	11,497	3·68	4·82
35–64	374,782	292,484	32,881	33,740	8·77	11·54
65 and over	68,521	54,056	16,636	14,880	24·28	27·53
Not stated	357	4,957	53	412	14·85	8·31
Females	*1,076,099*	*868,786*	*35,452*	*39,434*	*3·29*	*4·54*
10–14	157,660	137,271	1,565	1,967	0·99	1·43
15–20	181,091	145,690	2,319	2,420	1·28	1·66
21–34	316,874	248,585	5,744	6,247	1·81	2·51
35–64	350,504	278,972	15,605	18,750	4·45	6·72
65 and over	69,677	54,188	10,163	9,643	14·59	17·80
Not stated	293	4,080	56	407	19·11	9·98
Ontario—						
Males	*1,423,989*	*1,173,349*	*38,544*	*41,970*	*2·71*	*3·58*
10–14	161,623	139,308	933	1,579	0·58	1·13
15–20	193,449	151,066	2,077	2,940	1·07	1·95
21–34	382,183	323,815	9,281	10,984	2·43	3·39
35–64	571,276	470,731	19,317	20,642	3·38	4·39
65 and over	114,943	85,948	6,902	5,719	6·00	6·65
Not stated	515	2,481	34	106	6·60	4·27
Females	*1,367,088*	*1,151,115*	*25,613*	*26,968*	*1·87*	*2·34*
10–14	156,634	136,244	755	1,332	0·48	0·98
15–20	184,995	150,658	1,455	1,714	0·79	1·14
21–34	366,253	330,377	5,968	7,079	1·63	2·14
35–64	539,694	445,775	12,304	12,057	2·28	2·70
65 and over	119,151	85,983	5,108	4,733	4·29	5·50
Not stated	356	2,078	23	53	6·46	2·55
Manitoba—						
Males	*296,095*	*240,602*	*11,992*	*15,592*	*4·05*	*6·48*
10–14	38,968	33,447	460	891	1·18	2·66
15–20	45,437	32,627	750	1,203	1·65	3·69
21–34	77,963	70,888	2,297	3,702	2·95	5·22
35–64	116,307	92,931	6,299	8,071	5·42	8·68
65 and over	17,341	10,377	2,180	1,662	12·57	16·02
Not stated	79	332	6	63	7·59	18·98
Females	*261,711*	*211,503*	*12,884*	*16,463*	*4·92*	*7·78*
10–14	37,519	32,561	433	810	1·15	2·49
15–20	45,368	31,855	723	1,296	1·59	4·07
21–34	71,106	66,238	2,479	4,925	3·49	7·44
35–64	93,391	71,983	7,122	7,962	7·63	11·06
65 and over	14,265	8,595	2,122	1,432	14·88	16·66
Not stated	62	271	5	38	8·06	14·02
Saskatchewan—						
Males	*390,105*	*302,423*	*14,289*	*15,139*	*3·66*	*5·00*
10–14	55,606	41,404	589	931	1·06	2·25
15–20	60,555	38,862	924	1,442	1·53	3·71
21–34	104,711	95,581	3,565	3,773	3·40	3·95
35–64	151,419	116,292	6,720	7,347	4·44	6·32
65 and over	17,686	9,849	2,471	1,605	13·97	16·30
Not stated	128	435	20	42	15·63	9·66
Females	*315,245*	*235,468*	*14,808*	*16,678*	*4·70*	*7·08*
10–14	54,430	39,750	569	946	1·05	2·38
15–20	57,784	35,686	821	1,820	1·42	5·10
21–34	85,255	76,102	3,584	4,816	4·20	6·33
35–64	104,390	76,292	7,457	7,628	7·14	10·00
65 and over	13,325	7,279	2,373	1,424	17·81	19·56
Not stated	61	353	4	44	6·56	12·46

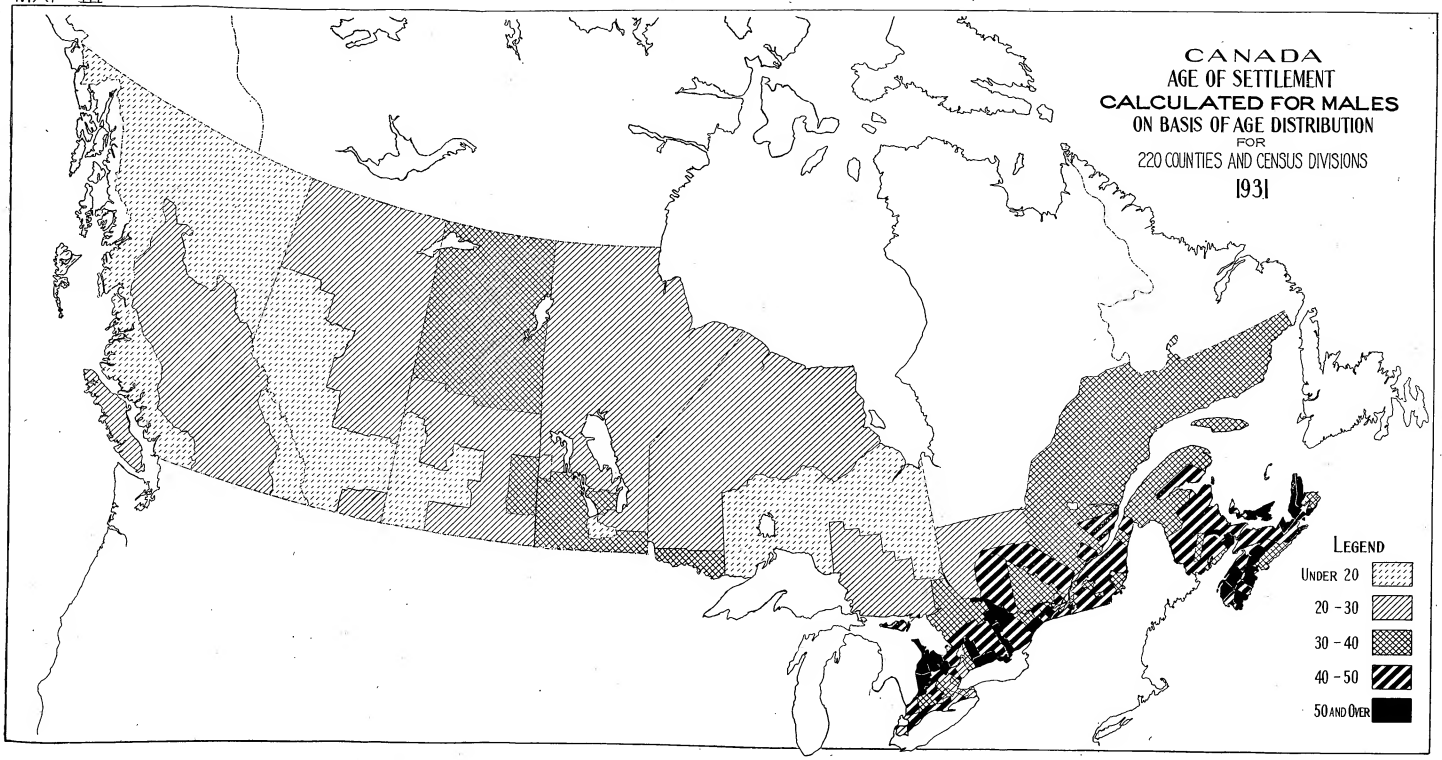
TABLE 12. Number and percentage illiterate of the population 10 years of age and over, by certain age groups and sex, Canada and provinces, 1931 and 1921—Con.

Age Group	Population 10 Years and over					
	Total		Illiterate			
			No.		P.C.	
	1931	1921	1931	1921	1931	1921
Alberta—						
Males	*319,840*	*245,906*	*9,763*	*11,347*	*3·05*	*4·62*
10–14	40,458	30,265	430	923	1·06	3·05
15–20	44,403	30,179	623	1,143	1·40	3·79
21–34	89,433	76,348	2,575	2,843	2·88	3·72
35–64	130,511	100,711	4,736	5,408	3·63	5·37
65 and over	14,852	8,073	1,391	1,013	9·37	12·55
Not stated	83	337	8	17	9·64	5·04
Females	*252,289*	*188,160*	*9,906*	*11,140*	*3·93*	*5·92*
10–14	39,025	28,985	363	768	0·93	2·65
15–20	42,845	27,625	557	1,232	1·30	4·46
21–34	71,337	50,251	2,744	3,091	3·85	5·13
35–64	88,241	65,325	4,849	5,159	5·50	7·90
65 and over	10,804	5,714	1,388	875	12·85	15·31
Not stated	35	248	5	15	14·29	6·05
British Columbia—						
Males	*328,983*	*241,063*	*13,753*	*16,455*	*4·18*	*6·83*
10–14	30,180	22,791	463	732	1·53	3·21
15–20	37,511	22,821	549	911	1·46	3·99
21–34	78,449	63,925	2,522	4,241	3·21	6·53
35–64	159,434	120,272	8,385	9,200	5·26	7·65
55 and over	22,056	10,639	1,570	1,262	7·57	11·86
Not stated	1,353	615	163	107	12·05	17·40
Females	*254,152*	*179,488*	*9,335*	*9,649*	*3·67*	*5·37*
10–14	29,543	22,502	398	797	1·34	3·54
15–20	36,053	22,075	508	816	1·59	3·70
21–34	55,498	53,455	2,357	2,479	3·60	4·64
35–64	105,845	73,444	4,578	4,484	4·28	6·11
65 and over	15,956	7,715	1,327	1,027	8·32	13·31
Not stated	157	295	57	46	42·58	15·59
Yukon—						
Males	*2,476*	*2,562*	*393*	*511*	*15·88*	*19·95*
10–14	158	133	76	56	48·10	42·11
15–20	181	137	41	46	22·65	33·58
21–34	482	282	77	55	15·98	19·50
35–64	1,283	1,591	150	114	11·69	7·17
65 and over	350	185	48	25	13·71	13·51
Not stated	21	234	1	215	4·76	91·88
Females	*1,067*	*1,051*	*409*	*458*	*38·33*	*43·58*
10–14	171	107	64	38	37·43	35·51
15–20	150	87	51	31	40·67	35·63
21–34	263	207	100	56	38·02	31·88
35–64	430	381	154	79	35·81	20·73
65 and over	51	35	28	16	54·90	45·71
Not stated	2	234	2	228	100·00	97·44
Northwest Territories—						
Males	*3,850*	*3,511*	*2,103*	*2,988*	*54·62*	*85·10*
10–14	580	281	413	241	71·21	85·77
15–20	603	272	358	220	59·37	80·88
21–34	1,102	514	494	350	44·83	70·04
35–64	1,437	692	751	475	52·26	68·64
65 and over	80	37	40	29	50·00	78·38
Not stated	48	1,715	47	1,663	97·92	96·97
Females	*3,171*	*3,227*	*1,978*	*3,029*	*62·38*	*93·87*
10–14	495	251	345	231	59·70	88·51
15–20	575	312	361	276	52·78	88·46
21–34	934	465	541	409	57·92	87·77
35–64	1,044	477	641	406	61·40	85·12
55 and over	91	50	52	58	68·13	96·67
Not stated	32	1,551	28	1,649	87·50	99·88

MAP II


CANADA
PERCENTAGE OF POPULATION
BORN IN PROVINCE OF RESIDENCE
CALCULATED FOR MALES
ON BASIS OF AGE DISTRIBUTION
FOR
220 COUNTIES AND CENSUS DIVISIONS
1931
LEGEND
UNDER 60
60-79
80-94
95 AND OVER

MAP III


CANADA
AGE OF SETTLEMENT
CALCULATED FOR MALES
ON BASIS OF AGE DISTRIBUTION
FOR
220 COUNTIES AND CENSUS DIVISIONS
1931
LEGEND
UNDER 20
20 - 30
30 - 40
40 - 50
50 AND OVER

MAP IV

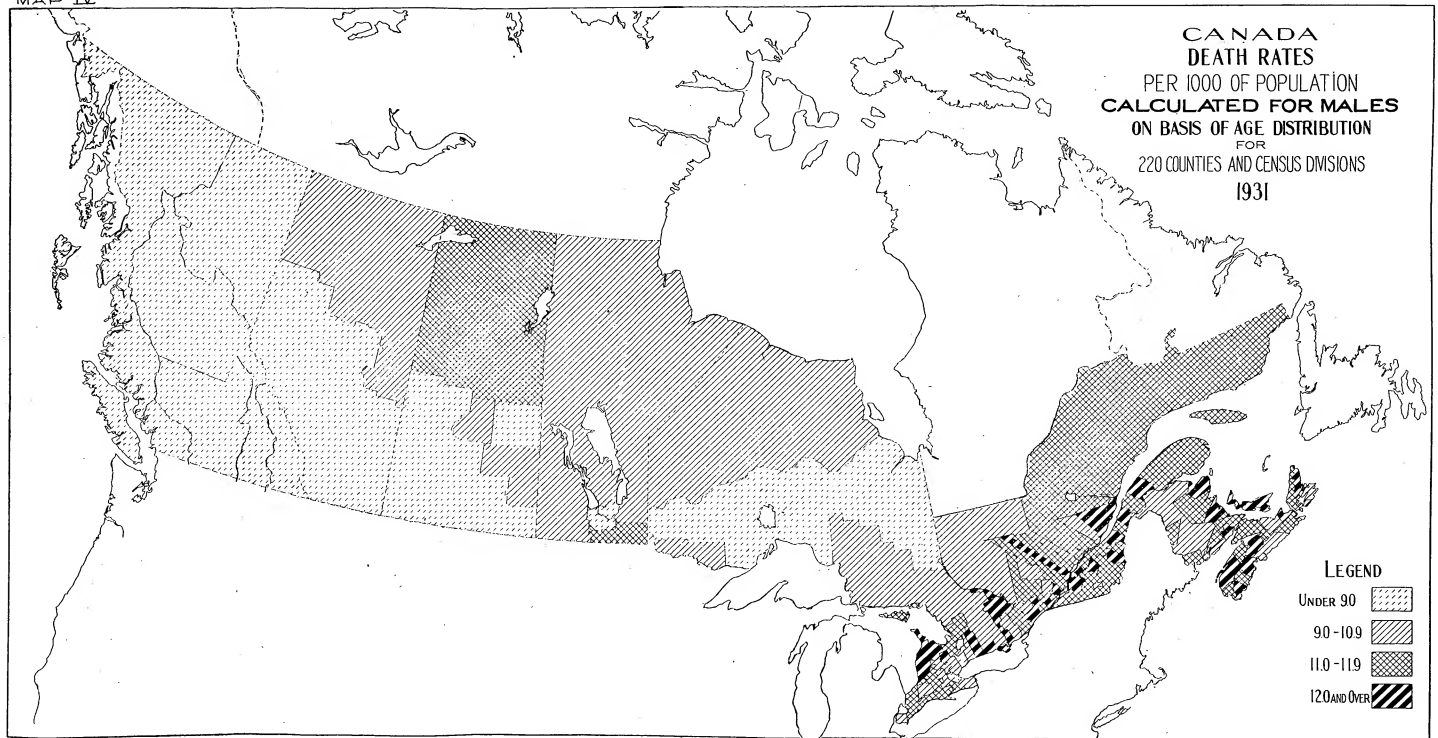

CANADA
DEATH RATES
PER 1000 OF POPULATION
CALCULATED FOR MALES
ON BASIS OF AGE DISTRIBUTION
FOR
220 COUNTIES AND CENSUS DIVISIONS
1931
LEGEND
UNDER 90
90-109
110-119
120 AND OVER

TABLE 13. Number and percentage illiterate of the population 10 years of age and over, by nativity, sex, rural and urban, Canada and provinces, 1931 and 1921

C.=Canadian born; B.=British born; F.=Foreign born.

Province and Nativity	Illiterates 10 Years and over															
	Number								Percentage							
	Rural				Urban				Rural				Urban			
	Males		Females		Males		Females		Males		Females		Males		Females	
	1931	1921	1931	1921	1931	1921	1931	1921	1931	1921	1931	1921	1931	1921	1931	1921
CANADA	**123,498**	**138,973**	**80,973**	**96,223**	**60,329**	**59,688**	**44,596**	**46,011**	**6·10**	**7·72**	**4·94**	**6·47**	**2·70**	**3·58**	**1·96**	**2·66**
C.	95,629	104,887	55,770	66,674	35,557	33,134	24,132	25,389	6·41	7·99	4·33	5·78	2·35	3·00	1·46	2·07
B.	1,541	2,070	906	1,067	1,833	2,289	1,919	2,382	0·72	1·00	0·59	0·70	0·45	0·67	0·50	0·72
F.	26,328	32,016	24,297	28,482	22,939	24,265	18,545	18,240	8·29	11·44	12·34	15·73	7·18	11·07	8·05	10·71
Prince Edward Island	**876**	**1,100**	**533**	**736**	**234**	**151**	**192**	**137**	**3·20**	**3·93**	**2·21**	**2·84**	**2·75**	**2·13**	**2·06**	**1·66**
C.	850	1,072	517	690	212	138	174	122	3·20	3·93	2·21	2·73	2·63	2·05	1·96	1·55
B.	19	21	10	42	8	5	6	7	5·51	7·27	3·65	12·61	3·45	2·46	2·47	3·26
F.	7	7	6	4	14	8	12	8	1·51	1·99	1·52	1·21	6·19	5·33	6·52	6·06
Nova Scotia	**7,450**	**8,558**	**4,581**	**6,407**	**2,745**	**2,975**	**2,363**	**2,680**	**6·36**	**7·16**	**4·46**	**5·86**	**3·05**	**3·46**	**2·55**	**3·03**
C.	7,192	8,244	4,417	6,207	1,769	1,877	1,628	1,921	6·47	7·24	4·53	5·96	2·36	2·69	2·04	2·55
B.	128	179	100	127	440	458	410	436	3·76	5·08	3·15	3·99	4·35	4·11	4·34	4·30
F.	130	135	64	73	536	640	325	329	5·05	5·99	3·12	3·53	11·07	13·03	9·68	9·64
New Brunswick	**12,592**	**12,266**	**6,522**	**7,326**	**1,333**	**1,502**	**993**	**1,123**	**11·41**	**11·97**	**6·73**	**7·99**	**2·74**	**3·23**	**1·83**	**2·19**
C.	12,210	11,860	6,311	7,095	1,209	1,301	896	966	11·74	12·20	6·92	8·16	2·75	3·12	1·80	2·08
B.	30	45	26	41	27	24	19	47	0·85	1·79	0·90	1·89	1·04	0·87	0·74	1·67
F.	352	361	185	190	97	177	78	110	12·31	13·45	6·61	7·40	4·55	8·33	3·79	5·36
Quebec	**40,393**	**43,708**	**16,985**	**20,361**	**27,367**	**24,400**	**18,467**	**19,073**	**10·02**	**11·37**	**4·77**	**5·84**	**3·98**	**5·04**	**2·56**	**3·67**
C.	39,593	43,001	16,589	19,960	23,382	20,737	14,530	15,070	10·14	11·53	4·78	5·88	4·09	5·16	2·35	3·41
B.	116	135	62	94	193	315	284	422	2·50	3·19	2·24	2·89	0·38	0·81	0·56	1·05
F.	684	572	334	307	3,792	3,348	3,653	3,581	8·29	7·74	5·57	4·97	5·78	7·83	7·07	9·59
Ontario	**21,439**	**24,003**	**12,104**	**13,023**	**17,105**	**17,967**	**13,509**	**13,945**	**3·69**	**4·68**	**2·52**	**2·94**	**2·03**	**2·72**	**1·52**	**1·97**
C.	17,003	18,764	9,344	10,487	7,346	7,838	5,286	5,977	3·73	4·50	2·36	2·81	1·34	1·84	0·86	1·22
B.	627	801	370	500	720	944	824	1,110	0·80	1·23	0·63	0·95	0·38	0·58	0·44	0·68
F.	3,809	4,438	2,390	2,036	9,039	9,185	7,399	6,858	8·11	14·74	9·10	11·41	8·37	13·05	9·36	12·67
Manitoba	**9,165**	**11,622**	**9,426**	**12,211**	**2,827**	**3,970**	**3,458**	**4,252**	**5·61**	**8·36**	**7·24**	**11·01**	**2·13**	**3·91**	**2·63**	**4·23**
C.	3,742	4,263	3,389	4,140	531	541	530	521	3·71	5·48	3·97	6·31	0·80	1·24	0·70	1·07
B.	97	137	72	74	87	215	83	169	0·40	0·53	0·41	0·39	0·26	0·63	0·28	0·55
F.	5,326	7,222	5,965	7,997	2,209	3,214	2,845	3,562	13·96	20·57	21·71	30·58	6·74	13·46	10·68	16·96
Saskatchewan	**11,720**	**13,139**	**12,696**	**14,948**	**2,569**	**2,000**	**2,112**	**1,730**	**4·34**	**6·04**	**6·27**	**9·45**	**2·14**	**2·36**	**1·88**	**2·24**
C.	4,394	4,393	4,198	4,478	496	297	503	361	3·02	4·57	3·52	6·10	0·77	0·76	0·74	0·92
B.	142	166	93	88	79	42	68	45	0·44	0·49	0·45	0·40	0·32	0·19	0·32	0·23
F.	7,184	8,580	8,405	10,382	1,994	1,661	1,541	1,324	7·76	9·76	13·44	16·57	6·54	7·23	6·61	7·21
Alberta	**7,850**	**9,378**	**8,294**	**9,728**	**1,913**	**1,969**	**1,612**	**1,412**	**3·89**	**5·91**	**5·81**	**0·07**	**1·62**	**2·26**	**1·47**	**1·74**
C.	3,562	4,236	3,438	4,174	307	259	302	327	3·94	7·30	4·74	9·84	0·54	0·73	0·51	0·91
B.	98	79	52	34	52	52	53	67	0·34	0·30	0·28	0·20	0·17	0·19	0·19	0·27
F.	4,190	5,063	4,804	5,520	1,554	1,658	1,257	1,018	5·07	6·80	9·33	11·48	5·14	7·04	5·48	5·23
British Columbia	**9,540**	**11,712**	**7,459**	**8,000**	**4,213**	**4,741**	**1,876**	**1,649**	**6·54**	**8·89**	**7·51**	**9·19**	**2·30**	**4·34**	**1·21**	**1·78**
C.	4,667	5,578	5,238	5,964	289	140	273	124	7·32	11·33	10·21	15·34	0·37	0·36	0·35	0·31
B.	283	504	121	67	227	234	172	79	0·71	1·16	0·40	0·20	0·37	0·56	0·31	0·21
F.	4,590	5,030	2,100	1,969	3,697	4,367	1,431	1,446	10·83	14·45	11·81	13·06	8·32	15·48	6·82	10·15
Yukon	**370**	**498**	**395**	**454**	**23**	**13**	**14**	**4**	**23·18**	**28·18**	**55·79**	**65·89**	**2·62**	**1·63**	**3·90**	**1·10**
C.	334	489	371	453	16	6	10	–	38·08	49·10	65·55	77·84	4·56	1·78	5·00	–
B.	1	2	–	–	–	–	–	–	0·38	0·70	–	–	–	–	–	–
F.	35	7	24	1	7	7	4	4	7·73	1·44	24·74	1·28	2·44	2·72	4·08	2·08
Northwest Territories	**2,103**	**2,988**	**1,978**	**3,029**	–	–	–	–	**54·62**	**85·10**	**62·38**	**93·87**	–	–	–	–
C.	2,082	2,987	1,958	3,026	–	–	–	–	61·29	89·59	63·39	94·62	–	–	–	–
B.	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
F.	21	1	20	3	–	–	–	–	8·50	1·02	37·74	18·75	–	–	–	–

TABLE 14. Number and percentage illiterate of the population 10 years of age and over, by racial origin, nativity and sex, Canada, 1931 and 1921

B.=Canadian and British born; F.=Foreign born.

Racial Origin	Illiterates 10 Years and over											
	Number						Percentage					
	Both Sexes		Male		Female		Both Sexes		Male		Female	
	1931	1921	1931	1921	1931	1921	1931	1921	1931	1921	1931	1921
ALL RACES[1]	**272,796**	**295,903**	**165,974**	**176,820**	**106,822**	**119,083**	**3·38**	**4·49**	**3·94**	**5·17**	**2·76**	**3·75**
B.	**181,104**	**193,180**	**116,910**	**120,683**	**64,194**	**72,497**	**2·58**	**3·36**	**3·27**	**4·13**	**1·87**	**2·57**
F.	**91,692**	**102,723**	**49,064**	**56,137**	**42,628**	**46,586**	**8·63**	**12·11**	**7·72**	**11·28**	**9·99**	**13·28**
British races	*38,731*	*42,531*	*24,106*	*25,630*	*14,625*	*16,901*	*0·88*	*1·11*	*1·07*	*1·30*	*0·68*	*0·86*
B.	*37,849*	*41,544*	*23,562*	*25,042*	*14,287*	*16,502*	*0·89*	*1·14*	*1·08*	*1·34*	*0·69*	*0·92*
F.	*882*	*987*	*544*	*588*	*338*	*399*	*0·54*	*0·51*	*0·66*	*0·58*	*0·42*	*0·44*
English	18,515	19,992	11,522	12,348	6,993	7,644	0·83	1·00	1·01	1·22	0·64	0·78
B.	18,058	19,462	11,245	12,038	6,813	7,424	0·84	1·03	1·02	1·25	0·65	0·80
F.	457	530	277	310	180	220	0·56	0·52	0·69	0·59	0·44	0·45
Irish	10,825	12,144	7,174	7,721	3,651	4,423	1·08	1·37	1·39	1·71	0·74	1·02
B.	10,561	11,857	6,998	7,546	3,563	4,311	1·10	1·42	1·42	1·77	0·76	1·05
F.	264	287	176	175	88	112	0·60	0·60	0·78	0·68	0·41	0·50
Scottish	9,182	10,171	5,267	5,419	3,915	4,752	0·83	1·09	0·93	1·13	0·73	1·05
B.	9,034	10,013	5,185	5,321	3,849	4,692	0·84	1·12	0·94	1·16	0·74	1·08
F.	148	158	82	98	66	60	0·42	0·41	0·46	0·47	0·38	0·33
Other	209	224	143	142	66	82	0·41	0·69	0·50	0·77	0·30	0·58
B.	196	212	134	137	62	75	0·42	0·73	0·51	0·85	0·30	0·59
F.	13	12	9	5	4	7	0·36	0·33	0·44	0·23	0·26	0·47
European races	*221,565*	*235,668*	*132,017*	*136,667*	*89,548*	*99,001*	*6·19*	*8·86*	*7·01*	*9·85*	*5·28*	*7·79*
B.	*141,308*	*149,056*	*92,148*	*94,057*	*49,160*	*54,999*	*5·15*	*7·23*	*6·66*	*9·05*	*3·68*	*5·39*
F.	*80,257*	*86,612*	*39,869*	*42,610*	*40,388*	*44,002*	*9·60*	*14·51*	*7·97*	*12·32*	*12·09*	*17·52*
French	133,300	140,964	88,006	90,036	45,294	50,928	6·18	7·96	8·10	10·08	4·23	5·80
B.	130,642	138,243	86,364	88,390	44,278	49,853	6·25	8·10	8·20	10·28	4·27	5·89
F.	2,658	2,721	1,642	1,646	1,016	1,075	3·95	4·19	4·90	4·99	2·97	3·37
Austrian, n.o.s.	3,929	19,129	2,164	9,486	1,765	9,643	10·50	27·47	10·08	23·58	11·05	32·79
B.	242	1,281	126	545	116	736	1·55	6·83	1·61	5·67	1·49	8·06
F.	3,687	17,848	2,038	8,941	1,649	8,907	16·91	35·08	14·95	29·21	20·17	43·93
Belgian	731	877	424	501	307	376	3·40	5·69	3·55	5·83	3·21	5·52
B.	68	43	43	30	25	13	1·11	1·56	1·38	2·18	0·83	0·94
F.	663	834	381	471	282	363	4·32	6·59	4·32	6·53	4·31	6·69
Bulgarian	253	354	149	302	104	52	10·98	23·40	8·52	23·03	18·71	25·74
B.	–	6	–	3	–	3	–	16·67	–	13·64	–	21·43
F.	253	348	149	299	104	49	12·33	23·56	9·17	23·20	24·36	26·06
Czech and Slovak	2,098	587	1,455	270	643	317	8·49	9·25	8·47	7·64	8·53	11·29
B.	36	14	21	7	15	7	0·81	0·90	0·93	0·92	0·69	0·89
F.	2,062	573	1,434	263	628	310	10·16	11·94	9·62	9·47	11·67	15·35
Danish	317	234	198	146	119	88	1·16	1·49	1·14	1·56	1·18	1·38
B.	56	36	34	24	22	12	0·75	0·82	0·91	1·08	0·59	0·55
F.	261	198	164	122	97	76	1·31	1·74	1·21	1·71	1·53	1·80
Dutch	2,326	2,026	1,349	1,239	977	787	2·02	2·29	2·21	2·68	1·79	1·87
B.	1,729	1,709	1,093	1,093	636	616	1·96	2·46	2·40	3·06	1·49	1·82
F.	597	317	256	146	341	171	2·20	1·68	1·66	1·38	2·91	2·07
Finnish	2,517	1,711	1,444	930	1,073	781	6·61	10·85	6·46	10·15	6·82	11·81
B.	63	59	39	34	24	25	0·84	2·22	1·02	2·61	0·65	1·85
F.	2,454	1,652	1,405	896	1,049	756	8·03	12·59	7·58	11·40	8·71	14·37
German	9,464	6,958	5,113	3,656	4,351	3,302	2·57	3·15	2·63	3·14	2·51	3·15
B.	3,407	3,111	2,140	1,929	1,267	1,182	1·46	2·18	1·81	2·64	1·10	1·70
F.	6,057	3,847	2,973	1,727	3,084	2,120	4·48	4·90	3·88	3·99	5·25	6·02
Greek	465	454	226	266	239	188	6·71	10·81	4·74	8·02	11·02	21·29
B.	10	9	6	5	4	4	0·59	2·51	0·68	2·56	0·50	2·45
F.	455	445	220	261	235	184	8·67	11·59	5·67	8·36	17·22	25·56
Hebrew	4,955	6,890	1,471	2,330	3,484	4,560	3·81	7·38	2·24	4·89	5·39	9·96
B.	192	153	88	70	104	83	0·39	0·61	0·36	0·57	0·43	0·66
F.	4,763	6,737	1,383	2,260	3,380	4,477	5·85	9·83	3·37	6·40	8·39	13·48

[1]Exclusive of Yukon and Northwest Territories, and aborigines.

TABLE 14. Number and percentage illiterate of the population 10 years of age and over, by racial origin, nativity and sex, Canada, 1931 and 1921—Con.

B.=Canadian and British born; F.=Foreign born.

Racial Origin	Illiterates 10 Years and over											
	Number						Percentage					
	Both Sexes		Male		Female		Both Sexes		Male		Female	
	1931	1921	1931	1921	1931	1921	1931	1921	1931	1921	1931	1921
European races—Con.												
Hungarian	2,823	1,056	1,845	482	978	574	8·86	12·09	8·93	10·19	8·71	14·32
B.	45	41	20	19	25	22	0·82	1·79	0·72	1·66	0·92	1·93
F.	2,778	1,016	1,825	463	953	552	10·53	15·73	10·22	12·91	11·19	19·26
Icelandic	172	247	79	105	93	142	1·10	2·01	0·99	1·69	1·22	2·34
B.	30	26	20	14	10	12	0·33	0·49	0·43	0·51	0·23	0·46
F.	142	221	59	91	83	130	2·15	3·16	1·78	2·60	2·51	3·73
Italian	6,580	8,817	3,210	5,241	3,370	3,576	9·14	19·44	7·63	18·03	11·27	21·95
B.	339	238	187	115	152	123	1·21	2·61	1·33	2·57	1·09	2·64
F.	6,241	8,579	3,023	5,126	3,218	3,453	14·22	23·68	10·82	20·84	20·18	29·66
Lithuanian	533	237	323	113	210	124	10·79	18·41	10·25	15·67	11·74	21·91
B.	17	10	10	6	7	4	1·38	3·02	1·68	3·57	1·11	2·45
F.	516	227	313	107	203	120	13·90	23·74	12·25	19·35	17·58	29·78
Norwegian	814	694	474	313	340	381	1·10	1·38	1·08	1·06	1·12	1·83
B.	116	90	63	40	53	50	0·53	1·24	0·57	1·08	0·49	1·41
F.	698	604	411	273	287	331	1·34	1·40	1·26	1·06	1·48	1·92
Polish	13,193	6,928	7,033	3,453	6,160	3,475	11·75	19·57	10·74	17·30	13·16	22·52
B.	1,315	814	768	438	547	376	3·27	7·82	3·80	8·37	2·74	7·27
F.	11,878	6,114	6,265	3,015	5,613	3,099	16·48	24·46	13·84	20·47	20·92	30·21
Roumanian	2,688	2,068	1,441	1,144	1,247	924	12·63	23·73	11·24	20·95	14·73	28·40
B.	124	91	65	40	69	51	1·65	6·50	1·45	5·81	1·85	7·15
F.	2,564	1,977	1,386	1,104	1,178	873	18·61	27·03	15·33	23·13	24·86	34·36
Russian	8,528	13,124	3,750	6,253	4,778	6,871	13·14	19·55	10·31	16·16	16·77	24·17
B.	1,317	1,488	426	527	891	961	4·94	8·06	3·19	5·66	6·70	10·48
F.	7,211	11,636	3,324	5,726	3,887	5,910	18·87	23·92	14·44	19·49	25·58	30·67
Swedish	815	1,100	497	600	318	500	1·23	2·34	1·23	2·12	1·24	2·68
B.	128	81	73	55	55	26	0·61	0·92	0·69	1·25	0·53	0·60
F.	687	1,019	424	545	263	474	1·52	2·67	1·42	2·28	1·71	3·32
Ukrainian	23,463	20,661	10,269	9,381	13,194	11,180	13·94	30·39	10·89	24·51	17·82	38·05
B.	1,366	1,475	541	655	825	820	1·82	7·65	1·42	6·57	2·22	8·80
F.	22,097	19,086	9,728	8,726	12,369	10,360	23·72	39·46	17·29	30·83	33·54	51·65
Yugoslavic	1,403	552	982	370	421	182	10·48	19·65	9·51	18·72	13·74	21·88
B.	18	8	4	3	14	5	1·43	1·93	0·60	1·40	2·35	2·49
F.	1,385	544	978	367	407	177	11·42	22·72	10·13	20·82	16·50	28·05
Other	198	100	115	50	83	50	4·00	1·01	4·06	0·90	3·93	1·15
B.	48	30	27	15	21	15	2·20	0·56	2·36	0·55	2·02	0·58
F.	150	70	88	35	62	35	5·43	1·52	5·20	1·24	5·79	1·97
Asiatic races	*10,926*	*14,688*	*8,962*	*12,648*	*1,964*	*2,035*	*15·32*	*26·65*	*15·34*	*26·44*	*15·27*	*27·85*
B.	*521*	*108*	*393*	*58*	*128*	*50*	*4·14*	*3·31*	*5·87*	*3·21*	*2·43*	*3·42*
F.	*10,405*	*14,575*	*8,569*	*12,590*	*1,836*	*1,985*	*17·72*	*28·10*	*16·76*	*27·35*	*24·19*	*33·96*
Chineso	7,627	11,409	7,257	10,962	370	447	17·40	30·39	17·41	30·37	17·21	30·93
B.	78	49	50	33	28	16	2·83	4·61	3·08	4·98	2·47	3·98
F.	7,549	11,360	7,207	10,929	342	431	18·37	31·15	17·99	30·85	33·60	41·32
Japanese	1,849	2,353	964	1,308	885	1,045	11·20	19·55	9·34	15·38	14·33	29·63
B.	55	27	33	11	22	16	1·20	4·27	1·26	3·12	1·11	5·73
F.	1,794	2,326	931	1,297	863	1,029	15·07	20·40	12·07	15·91	20·57	31·68
Other	1,450	921	741	378	709	543	13·23	16·53	11·53	11·68	15·63	23·25
B.	388	32	310	14	78	18	7·40	2·04	10·06	1·77	3·61	2·30
F.	1,062	889	431	364	631	525	18·57	22·22	12·90	14·88	26·53	33·78
Negro	1,229	1,200	726	683	503	517	8·13	8·41	9·05	8·99	7·10	7·75
B.	1,157	1,073	689	613	468	460	8·97	9·56	10·22	10·45	7·59	8·59
F.	72	127	37	70	35	57	3·26	4·17	2·88	4·05	3·78	4·31
Various	45	856	27	745	18	111	8·33	18·76	8·91	23·17	7·59	8·24
B.	12	556	6	536	6	20	3·96	23·06	3·92	30·95	4·00	2·95
F.	33	300	21	209	12	91	13·92	13·95	14·00	14·09	13·79	13·62
Unspecified	300	965	136	447	164	518	4·97	5·06	5·28	4·64	4·73	5·48
B.	257	843	112	377	145	466	4·96	5·08	5·11	4·52	4·85	5·65
F.	43	122	24	70	19	62	4·99	4·92	6·28	5·46	3·97	4·34

TABLE 15. Number and percentage illiterate of the population 10 years of age and over, by birthplace, Canada[5], 1931 and foreign-born illiterates of corresponding racial origin, Canada[5], 1931 and 1921

Birthplace[1]	Illiterates 10 Years and over		Birthplace[1]	Illiterates 10 Years and over	
	1931			1931	
	No.	P.C.		No.	P.C.
TOTAL	304,513	3·73	*British Isles*	4,470	0·40
British born	212,515	2·99	England	2,786	0·39
			Ireland	812	0·78
Canada	206,317	3·47	Scotland	780	0·29
Prince Edward Island	2,001	2·46	Wales	50	0·23
Nova Scotia	15,059	3·78	Lesser Isles	42	0·79
New Brunswick	20,280	6·59			
Quebec	101,020	5·05	*British Possessions*	1,714	3·93
Ontario	34,955	1·60	Australia	22	0·65
Manitoba	8,055	2·49	India	360	7·95
Saskatchewan	8,530	2·92	Newfoundland	1,201	4·71
Alberta	6,758	3·54	New Zealand	9	0·67
British Columbia	9,328	6·19	South Africa	3	0·14
Yukon	1	0·30	West Indies	47	1·06
Northwest Territories	56	18·67	Other	72	3·29
Not stated	274	4·54			

			Foreign-Born Illiterates 10 Years and over of Corresponding Racial Origin			
			No.		P.C.	
			1931	1921	1931	1921
Foreign born	91,998	8·65				
Europe	77,261	11·31	80,257	86,612	9·60	14·51
Austria	6,763	18·41	3,687	17,848	16·91	35·08
Belgium	716	4·42	663	834	4·32	6·59
Bulgaria	156	10·87	253	348	12·33	23·56
Czechoslovakia	2,136	10·14	2,062	573	10·16	11·94
Denmark	253	1·55	261	198	1·31	1·74
Finland	2,428	8·23	2,454	1,652	8·03	12·59
France	475	2·90	2,658	2,721	3·95	4·19
Germany	1,499	4·02	6,057	3,847	4·48	4·90
Greece	539	9·75	455	445	8·67	11·59
Holland	200	1·99	597	317	2·20	1·68
Hungary	2,666	10·33	2,778	1,015	10·53	15·73
Iceland	137	2·40	142	221	2·15	3·16
Italy	6,174	14·87	6,241	8,579	14·22	23·68
Lithuania	637	11·92	516	227	13·90	23·74
Norway	615	1·94	698	604	1·34	1·40
Poland	27,300	16·88	11,878	6,114	16·48	24·46
Roumania	7,198	18·48	2,564	1,977	18·61	27·03
Russia	11,964	10·90	7,211	11,636	18·87	23·92
Spain	28	5·01	[4]	[4]	[4]	[4]
Sweden	609	1·80	687	1,019	1·52	2·67
Switzerland	106	1·78	[4]	[4]	[4]	[4]
Ukraine	2,805	21·37	22,097	19,086	23·72	39·46
Yugoslavia	1,713	10·87	1,385	544	11·42	22·72
Other	144	5·22	4,913	6,807	5·84	9·31
Asia	10,449	17·35	10,405	14,575	17·79	28·10
Armenia	133	21·28	[2]	[2]	[2]	[2]
China	7,550	18·03	7,549	11,360	18·37	31·15
Japan	1,794	14·80	1,794	2,326	15·07	20·40
Syria	774	19·92	[2]	[2]	[2]	[2]
Turkey	115	12·76	[2]	[2]	[2]	[2]
Other	76	10·01	1,062	889	18·57	22·22
South America	29	2·44	[3]	[3]	–	–
United States	4,164	1·31	–	–	–	–
Other countries	102	6·51	105	427	–	–
At sea	14	2·07	–	–	–	–
Not stated	–	–	43	122	4·99	4·92

[1]It would be desirable to show comparable birthplaces for 1931 and 1921 but data are not available by birthplace for 1921; consequently, the immigrants of the race corresponding to the birthplace are compared for the two census years and approximate the illiteracy of the country of birth.
[2]Included in "Other" Asia.
[3]Included in "Other" countries.
[4]Included in "Other" Europe.
[5]Exclusive of Yukon and Northwest Territories.

TABLE 16. Number and percentage illiterate of the population 10 years of age and over, Canada, by counties or census divisions, 1931 and 1921

Number on Map	County or Census Division	Illiterates 10 Years and over			
		1931		1921	
		No.	P.C.	No.	P.C.
	CANADA	**309,396**	**3·79**	**340,895**	**5·10**
	Prince Edward Island	**1,835**	**2·65**	**2,124**	**3·07**
1	Kings	402	2·68	538	3·36
2	Prince	919	3·77	1,019	4·24
3	Queens	514	1·72	567	1·94
	Nova Scotia	**17,139**	**4·26**	**20,620**	**5·11**
1	Annapolis	306	2·31	305	2·11
2	Antigonish	410	4·99	835	9·09
3	Cape Breton	3,034	4·37	3,523	5·54
4	Colchester	356	1·79	252	1·27
5	Cumberland	799	2·77	962	3·05
6	Digby	1,114	7·71	1,645	10·85
7	Guysborough	1,078	8·85	1,174	9·83
8	Halifax	2,556	3·23	2,389	3·14
9	Hants	297	1·98	322	2·12
10	Inverness	1,492	9·09	1,851	10·23
11	Kings	559	2·91	437	2·36
12	Lunenburg	1,052	4·15	1,536	5·85
13	Pictou	569	1·81	671	2·11
14	Queens	453	5·38	535	6·88
15	Richmond	1,236	14·29	1,741	18·10
16	Shelburne	308	3·16	342	3·29
17	Victorin	453	7·06	701	10·08
18	Yarmouth	1,067	6·52	1,405	8·19
	New Brunswick	**21,440**	**6·91**	**22,217**	**7·61**
1	Albert	209	3·46	182	2·71
2	Carleton	258	1·59	266	1·62
3	Chnrlotte	183	1·06	218	1·28
4	Gloucester	5,514	18·79	5,817	21·53
5	Kent	2,241	13·14	3,074	17·83
6	Kings	269	1·67	299	1·86
7	Madawnska	3,298	19·37	2,900	20·92
8	Northumberland	2,073	8·16	2,030	8·21
9	Queens	155	1·79	241	2·65
10	Restigouche	2,641	12·50	2,197	13·87
11	St. John	912	1·82	1,045	2·15
12	Sunbury	183	3·44	224	4·75
13	Victoria	688	6·42	878	9·66
14	Westmorland	2,423	5·46	2,407	5·96
15	York	393	1·52	439	1·75
	Quebec	**103,212**	**4·76**	**107,542**	**6·20**
1	Abitibi	1,193	7·52	–	–
2	Argenteuil	984	6·83	1,217	9·60
3	Arthabaska	948	4·79	849	4·83
4	Bagot	583	4·64	645	4·95
5	Beauce	1,633	5·29	1,476	5·37
6	Beauharnois	840	4·25	689	4·61
7	Bellechasse	1,265	8·19	1,263	8·36
8	Berthier	1,147	7·85	1,380	9·24
9	Bonnventure	2,086	9·11	2,301	11·12
10	Bromo	467	4·71	556	5·42
11	Chambly	578	2·75	499	3·01
12	Chnmplain	2,154	5·08	2,662	7·10
13	Charlevoix	1,667	10·29	1,596	10·95
14	Chateauguay	599	5·82	754	7·35
15	Chicoutimi	2,341	6·32	1,491	5·88
16	Compton	825	5·00	1,021	6·05
17	Deux-Montngnes	670	6·16	831	7·77
18	Dorchester	1,054	5·36	1,183	6·44
19	Drummond	894	4·65	877	6·14
20	Frontenac	1,229	7·07	1,271	7·93
21	Gaspé	4,225	13·23	4,739	16·99
23	Hull	4,867	10·41	5,141	12·97
24	Huntingdon	957	9·89	1,206	11·88
25	Iberville	241	3·36	279	3·97
26	Joliette	1,479	7·30	1,873	10·01
27	Kamouraska	1,137	6·68	1,018	6·60
28	Labelle	2,088	14·92	5,016	15·57
29	Lac-St-Jean	1,906	5·75	1,335	5·68
30	Laprairie	599	5·89	958	10·65
31	L'Assomption	843	7·28	639	5·91
33	Lévis	747	2·83	974	4·04
34	L'Islet	813	5·88	743	5·94
35	Lotbinière	945	5·70	603	3·14
36	Maskinongé	706	6·04	1,146	9·86
37	Matane	1,971	6·44	1,906	7·97
38	Mégnntic	1,675	6·67	1,631	6·91
39	Missisquoi	546	3·55	702	5·23
40	Montcalm	879	8·58	1,085	10·57
41	Montmagny	1,018	0·95	1,245	8·02
42	Montmorency	672	5·52	594	6·00

TABLE 16. Number and percentage illiterate of the population 10 years of age and over, Canada, by counties or census divisions, 1931 and 1921—Con.

Number on Map	County or Census Division	Illiterates 10 Years and over			
		1931		1921	
		No.	P.C.	No.	P.C.
	Quebec—Con.				
43	Montreal and Jesus Islands	18,696	2·29	19,966	3·49
45	Napierville	312	5·45	468	8·00
46	Nicolet	884	4·20	1,102	5·09
47	Papineau	2,715	12·58	–	–
48	Pontiac	2,210	13·98	2,071	13·97
49	Portneuf	1,214	4·68	1,245	5·30
50	Quebec	4,367	3·35	3,482	3·70
51	Richelieu	950	5·77	979	6·70
52	Richmond	856	4·68	998	5·86
53	Rimouski	1,480	6·45	1,524	8·23
54	Rouville	380	3·61	493	4·85
55	Saguenay	2,904	19·35	2,491	20·16
56	Shefford	1,086	5·09	1,163	6·12
57	Sherbrooke	1,219	4·17	1,305	5·37
58	Soulanges	311	4·55	391	5·29
59	Stanstead	868	4·47	936	5·21
60	St-Hyacinthe	915	4·47	894	5·00
61	St-Jean	576	4·20	544	4·93
62	St-Maurice	2,220	4·46	2,623	7·12
63	Temiskaming	957	6·51	1,830	10·12
64	Témiscouata	2,350	6·74	2,537	8·51
65	Terrebonne	1,992	6·99	2,453	9·99
66	Vaudreuil	498	5·38	491	5·69
67	Verchères	465	4·88	469	5·08
68	Wolfe	629	5·32	776	6·19
69	Yamaska	687	5·58	917	7·00
	Ontario	**64,157**	**2·30**	**68,938**	**2·96**
1	Addington	133	2·42	222	3·87
2	Algoma	1,815	5·00	2,528	7·41
3	Brant	929	2·10	1,166	2·75
4	Bruce	496	1·43	569	1·60
5	Carleton	3,126	2·26	3,646	3·11
6	Cochrane	2,837	6·57	–	–
7	Dufferin	150	1·21	159	1·26
8	Dundas	215	1·64	255	1·83
9	Durham	228	1·06	229	1·14
10	Elgin	349	0·96	331	0·90
11	Essex	3,127	2·51	2,646	3·32
12	Frontenac	945	2·50	865	2·40
13	Glengarry	1,151	7·91	1,575	10·06
14	Grenville	210	1·55	262	1·89
15	Grey	686	1·46	682	1·43
16	Haldimand	317	1·80	324	1·88
17	Haliburton	140	3·09	188	4·01
18	Halton	132	0·60	215	1·06
19	Hastings	1,599	3·42	1,690	3·75
20	Huron	292	0·78	430	1·11
21	Kenora	1,339	7·81	2,121	14·58
22	Kent	1,149	2·28	1,638	3·53
23	Lambton	572	1·28	546	1·29
24	Lanark	424	1·57	534	2·01
25	Leeds	467	1·60	581	2·02
26	Lennox	395	3·95	161	1·56
27	Lincoln	966	2·17	746	1·91
28	Manitoulin	568	6·81	798	10·03
29	Middlesex	1,002	1·01	955	1·08
30	Muskoka	569	3·42	571	3·79
31	Nipissing	2,380	7·83	2,711	11·05
32	Norfolk	468	1·84	445	2·07
33	Northumberland	389	1·50	411	1·61
34	Ontario	625	1·29	715	1·91
35	Oxford	349	0·88	262	0·69
36	Parry Sound	872	4·37	1,097	5·45
37	Peel	221	0·95	170	0·88
38	Perth	350	0·83	392	0·96
39	Peterborough	401	1·12	601	1·79
40	Prescott	1,882	10·23	2,187	11·34
41	Prince Edward	190	1·38	172	1·25
42	Rainy River	708	5·27	779	7·83
43	Renfrew	2,648	6·52	2,728	6·97
44	Russell	1,125	8·31	1,421	9·58
45	Simcoe	2,389	3·49	3,030	4·56
46	Stormont	1,626	6·46	1,331	6·76
47	Sudbury	3,185	7·21	3,246	10·62
48	Thunder Bay	3,194	6·12	3,625	9·92
49	Timiskaming	894	3·10	2,794	7·54
50	Victoria	202	0·94	274	1·22
51	Waterloo	897	1·23	799	1·35
52	Welland	1,198	1·81	2,166	4·14
53	Wellington	415	0·87	488	1·11
54	Wentworth	2,365	1·51	2,328	1·90
55	York	8,260	1·16	8,143	1·57
56	District of Patricia	596	20·62	–	–

TABLE 16. Number and percentage illiterate of the population 10 years of age and over, Canada, by counties or census divisions, 1931 and 1921—Con.

County or Census Division	Illiterates 10 Years and over			
	1931		1921	
	No.	P.C.	No.	P.C.
Manitoba	**24,876**	**4·40**	**32,055**	**7·09**
Division No. 1	1,270	7·75	1,696	12·68
Division No. 2	1,102	3·95	1,249	4·74
Division No. 3	354	1·69	431	2·35
Division No. 4	181	1·23	180	1·36
Division No. 5	2,623	7·38	3,932	17·18
Division No. 6	5,265	2·23	6,490	3·66
Division No. 7	905	2·98	1,461	5·27
Division No. 8	313	1·94	361	2·40
Division No. 9	1,087	3·02	1,192	4·13
Division No. 10	788	5·63	941	6·58
Division No. 11	694	3·14	1,164	5·76
Division No. 12	2,005	10·72	2,801	14·74
Division No. 13	2,088	11·22	2,463	13·44
Division No. 14	1,976	10·12	2,507	15·13
Division No. 15	452	6·04	415	6·40
Division No. 16	3,773	16·20	4,772	33·58
Saskatchewan	**29,097**	**4·13**	**31,817**	**5·92**
Division No. 1	816	2·52	596	2·32
Division No. 2	1,034	3·12	618	2·37
Division No. 3	892	2·57	919	3·44
Division No. 4	402	1·87	310	1·87
Division No. 5	1,588	3·86	2,381	6·57
Division No. 6	2,141	2·47	2,303	3·49
Division No. 7	852	1·73	787	1·81
Division No. 8	1,004	2·69	1,095	3·48
Division No. 9	5,463	11·96	8,132	20·99
Division No. 10	1,994	6·38	2,224	9·02
Division No. 11	999	1·43	1,078	2·16
Division No. 12	931	2·92	870	3·39
Division No. 13	755	2·36	734	2·93
Division No. 14	1,404	4·08	1,236	7·12
Division No. 15	3,050	4·94	3,515	7·82
Division No. 16	2,338	6·29	2,430	10·38
Division No. 17	1,150	5·55	811	6·29
Division No. 18	2,284	51·96	1,778	58·26
Alberta	**19,669**	**3·44**	**22,487**	**5·18**
Division No. 1	519	2·28	552	2·49
Division No. 2	1,281	2·86	1,571	4·56
Division No. 3	215	1·85	359	2·83
Division No. 4	330	1·42	146	0·83
Division No. 5	410	2·01	531	2·14
Division No. 6	2,157	1·87	2,068	2·45
Division No. 7	357	1·21	387	1·45
Division No. 8	1,303	2·72	1,165	2·75
Division No. 9	522	2·73	267	2·00
Division No. 10	3,226	7·42	4,772	15·06
Division No. 11	2,492	2·46	2,813	3·97
Division No. 12	222	2·10	165	2·42
Division No. 13	2,141	12·03	2,041	18·87
Division No. 14	1,722	5·91	2,326	13·20
Division No. 15	791	7·84	909	19·21
Division No. 16	1,074	5·13	570	6·14
Division No. 17	907	21·95	1,845	49·04
British Columbia	**23,088**	**3·90**	**26,102**	**6·21**
Yukon	**802**	**22·64**	**969**	**26·82**
Northwest Territories	**4,081**	**58·13**	**6,017**	**89·30**

TABLE 17. Number and percentage illiterate of the population 10 years of age and over (a) Canadian-born, (b) total, by sex, cities of 30,000 and over, 1931 and 1921

City	Illiterates 10 Years and over											
	Canadian Born				Total							
	1931		1921		1931				1921			
					Males		Females		Males		Females	
	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.	No.	P.C.
Brantford, Ont.	120	0·74	109	0·75	234	1·94	223	1·72	367	3·22	266	2·19
Calgary, Alta.	44	0·13	30	0·15	489	1·33	249	0·74	444	1·81	312	1·28
Edmonton, Alta.	85	0·26	123	0·62	423	1·29	485	1·50	530	2·37	405	1·82
Halifax, N.S.	770	1·93	613	1·62	588	2·58	532	2·13	483	2·15	471	1·96
Hamilton, Ont.	259	0·37	229	0·46	1,105	1·74	941	1·46	1,064	2·38	873	1·87
Kitchener, Ont.	83	0·45	78	0·59	151	1·24	146	1·14	171	2·06	179	2·02
London, Ont.	191	0·45	189	0·55	307	1·09	220	0·69	307	1·29	215	0·80
Montreal, Que.	9,542	1·86	10,795	2·94	8,337	2·58	7,438	2·25	8,446	3·65	8,773	3·55
Ottawa, Ont.	1,575	1·83	1,643	2·40	1,076	2·25	1,009	1·78	1,211	3·09	1,106	2·37
Quebec, Que.	2,464	2·54	2,259	3·26	1,387	3·01	1,153	2·13	1,184	3·62	1,172	2·98
Regina, Sask.	43	0·18	72	0·59	357	1·65	369	1·71	163	1·17	222	1·73
Saint John, N.B.	399	1·16	325	0·97	290	1·59	221	1·08	272	1·53	245	1·21
Saskatoon, Sask.	56	0·29	21	0·24	117	0·65	136	0·78	136	1·37	78	0·80
Toronto, Ont.	763	0·25	891	0·38	3,283	1·28	3,480	1·25	3,579	1·77	3,571	1·60
Trois-Rivières, Que.	873	3·54	1,156	7·33	563	4·46	338	2·51	706	8·59	478	5·53
Vancouver, B.C.	208	0·22	116	0·30	2,280	2·00	1,083	1·10	2,590	4·96	860	1·90
Verdun, Que.	390	1·32	176	1·64	274	1·19	214	0·90	136	1·49	130	1·38
Victoria, B.C.	51	0·33	30	0·25	264	1·48	108	0·64	414	2·45	143	0·93
Windsor, Ont.	214	0·70	193	0·94	425	1·64	474	1·92	260	1·65	210	1·41
Winnipeg, Man.	283	0·31	181	0·32	1,586	1·71	2,102	2·27	2,226	3·18	2,713	3·89

TABLE 18. Immigrant arrivals 10 years of age and over, by quinquennial age groups and year of immigration, and percentages illiterate, by quinquennial age groups, in the population as a whole, with expected number illiterate in each age group of those arriving in each year, Canada, 1931

Age Group	P.C.[1] Illiterate in All Classes	No. Arriving in					Expected No. Illiterate of Those Arriving in				
		1926-31	1921-25	1911-20	1901-10	Before 1901	1926-31	1921-25	1911-20	1901-10	Before 1901
TOTAL	**3·79**	**401,677**	**266,419**	**671,992**	**626,972**	**257,023**	**12,360**	**8,901**	**27,007**	**30,356**	**18,566**
10-14	1·12	28,108	23,939	16,354	–	–	315	268	183	–	–
15-19	1·57	36,473	21,620	36,869	–	–	573	339	579	–	–
20-24	2·27	71,078	30,088	69,227	24,194	–	1,613	683	1,571	549	–
25-29	3·00	92,644	43,882	60,303	59,413	–	2,779	1,316	1,809	1,782	–
30-34	3·29	69,839	48,340	75,432	60,616	7,343	2,298	1,590	2,482	1,994	242
35-39	3·67	41,076	34,848	109,140	66,713	17,212	1,507	1,279	4,005	2,448	632
40-44	4·05	24,290	23,187	103,972	94,792	22,170	984	939	4,211	3,839	898
45-49	4·67	15,454	15,353	77,309	110,165	28,570	722	717	3,610	5,145	1,334
50-54	5·25	9,441	9,829	49,948	86,353	33,955	496	516	2,622	4,534	1,783
55-59	6·53	5,402	5,880	29,616	51,737	33,706	353	384	1,934	3,378	2,201
60-64	7·39	3,411	3,963	19,165	32,105	34,941	252	293	1,416	2,373	2,582
65-69	9·04	2,249	2,774	12,313	19,825	29,006	203	251	1,113	1,792	2,622
70-74	11·03	1,294	1,535	7,254	12,098	22,272	143	169	800	1,334	2,457
75-79	12·51	577	791	3,394	5,866	14,303	72	99	425	734	1,789
80-84	13·76	234	266	1,256	2,216	8,398	32	37	173	305	1,156
85 and over	16·91	107	124	440	879	5,147	18	21	74	149	870
Expected percentage illiterate							3·08	3·34	4·02	4·84	7·22
Index (correction factor)							1·000	1·084	1·305	1·571	2·344
Crude percentage illiterate							5·51	2·91	3·42	4·57	6·38
Percentage illiterate corrected for age							5·51	2·68	2·62	2·91	2·72

[1]Age not stated divided proportionately between age groups.

TABLE 19. Families with and without children and number, and number per family of children, by kind and age group, and other dependents, in families with two married heads, by literacy of heads, Canada[1], 1931

Item	In Families with Two Married Heads							
	Number in Class				Number per Family in Class			
	Both Literate	Wife Illiterate	Husband Illiterate	Both Illiterate	Both Literate	Wife Illiterate	Husband Illiterate	Both Illiterate
Families without own children	416,856	6,462	10,637	10,993	0·24	0·20	0·21	0·28
Families with own children	1,319,669	25,548	38,999	28,041	0·76	0·80	0·79	0·72
Own children	3,950,741	95,002	156,358	97,229	2·28	2·97	3·15	2·49
Under 7 years	1,333,354	28,094	46,001	26,039	0·77	0·88	0·93	0·67
7–14 years	1,414,960	35,453	55,923	34,115	0·81	1·11	1·13	0·87
15 years and over	1,202,427	31,455	54,434	37,075	0·69	0·98	1·10	0·95
Guardianship children	53,335	1,571	3,243	2,679	0·031	0·049	0·065	0·069
Under 7 years	12,994	481	888	780	0·007	0·015	0·018	0·020
7–14 years	24,041	683	1,569	1,259	0·014	0·021	0·032	0·032
15 years and over	16,300	407	786	040	0·009	0·013	0·016	0·016
Other dependents	61,784	969	1,777	1,103	0·030	0·030	0·036	0·028

[1]Nine provinces only.

TABLE 20. Families with and without dependents and number, and number per family of children, by kind and age group, and other dependents, in families with one head only, by marital status, literacy and sex of head, Canada[1], 1931

Item	In Families with Male Head				In Families with Female Head			
	Number in Class		Number per Family in Class		Number in Class		Number per Family in Class	
	Literate	Illiterate	Literate	Illiterate	Literate	Illiterate	Literate	Illiterate
One married head—								
Families without dependents	31,528	2,869	0·64	0·71	6,917	348	0·14	0·18
Families with dependents	18,062	1,198	0·36	0·29	40,822	1,569	0·86	0·82
Own children	35,050	2,536	0·71	0·62	87,993	4,126	1·84	2·15
Under 7 years	4,688	337	0·095	0·083	23,229	886	0·49	0·46
7–14 years	10,826	741	0·22	0·18	28,866	1,328	0·60	0·69
15 years and over	19,536	1,458	0·39	0·36	35,898	1,912	0·75	1·00
Guardianship children	783	79	0·016	0·019	1,478	125	0·031	0·065
Under 7 years	176	20	0·004	0·005	475	41	0·010	0·021
7–14 years	313	35	0·006	0·009	630	69	0·013	0·031
16 years and over	294	24	0·006	0·006	373	25	0·008	0·013
Other dependents	2,557	103	0·052	0·025	1,110	35	0·023	0·018
Widowed head—								
Families without dependents	29,290	3,103	0·35	0·38	45,540	2,940	0·25	0·27
Families with dependents	55,079	5,140	0·65	0·62	136,566	7,967	0·75	0·73
Own children	126,050	12,395	1·49	1·50	290,840	17,754	1·60	1·63
Under 7 years	9,835	953	0·12	0·12	18,052	1,266	0·099	0·12
7–14 years	33,649	3,152	0·40	0·38	61,691	3,803	0·34	0·35
15 years and over	82,566	8,290	0·98	1·01	211,097	12,685	1·16	1·16
Guardianship children	2,764	502	0·033	0·061	9,510	1,113	0·052	0·10
Under 7 years	530	146	0·006	0·018	1,792	269	0·010	0·025
7–14 years	1,092	199	0·013	0·024	4,457	525	0·024	0·048
15 years and over	1,142	157	0·014	0·019	3,261	319	0·018	0·029
Other dependents	5,551	340	0·066	0·041	6,180	215	0·034	0·020
Divorced head—								
Families without dependents	1,193	35	0·63	0·65	472	11	0·22	0·17
Families with dependents	714	19	0·37	0·35	1,646	55	0·78	0·83
Own children	1,108	32	0·58	0·69	3,019	117	1·43	1·77
Under 7 years	118	6	0·062	0·11	536	23	0·25	0·35
7–14 years	456	10	0·24	0·19	1,211	48	0·57	0·73
15 years and over	534	16	0·28	0·30	1,272	46	0·60	0·70
Guardianship children	26	–	0·014	–	30	1	0·014	0·016
Under 7 years	8	–	0·004	–	9	1	0·004	0·015
7–14 years	6	–	0·003	–	16	–	0·008	–
15 years and over	12	–	0·006	–	5	–	0·002	–
Other dependents	95	1	0·050	0·019	64	3	0·030	0·045
Single head—								
Families without dependents	108,037	4,173	0·87	0·88	33,509	347	0·83	0·72
Families with dependents	15,696	578	0·13	0·12	6,700	132	0·17	0·28
Own children	17	1	0·0001	0·0002	598	84	0·015	0·18
Under 7 years	4	1	–	0·0002	410	49	0·010	0·10
7–14 years	6	–	–	–	99	21	0·002	0·044
15 years and over	7	–	–	–	89	14	0·002	0·029
Guardianship children	3,959	212	0·032	0·045	2,652	46	0·066	0·096
Under 7 years	294	32	0·002	0·007	207	3	0·005	0·006
7–14 years	1,630	101	0·013	0·021	1,130	27	0·028	0·056
15 years and over	2,035	79	0·016	0·017	1,315	16	0·033	0·033
Other dependents	16,863	694	0·14	0·13	5,177	61	0·13	0·11

[1]Nine provinces only.

TABLE 21. Number and percentage illiterate of own children, by age groups and marital status and literacy of head of family, Canada[1], 1931

Marital Status of Head	Own Children in Age Group											
	7-14 Years						15 Years and over					
	Total		Illiterate				Total		Illiterate			
			No.		P.C.				No.		P.C.	
	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head
TOTAL	**1,551,764**	**134,594**	**32,394**	**16,762**	**2·09**	**12·45**	**1,553,426**	**147,385**	**8,000**	**16,598**	**0·51**	**11·26**
Two married heads—												
Both literate	1,414,960	–	29,726	–	2·10	–	1,202,427	–	5,206	–	0·43	–
Wife illiterate	–	35,453	–	3,276	–	9·24	–	31,455	–	1,918	–	6·10
Husband illiterate	–	55,923	–	5,170	–	9·24	–	54,434	–	3,677	–	6·75
Both illiterate	–	34,115	–	6,963	–	20·41	–	37,075	–	7,135	–	19·24
One head only—												
Married male	10,826	741	283	142	2·61	19·16	19,536	1,458	134	262	0·69	17·97
Married female	28,866	1,328	643	181	2·23	13·63	35,898	1,912	208	254	0·58	13·28
Widowed male	33,649	3,152	700	463	2·08	14·69	82,566	8,290	713	1,302	0·86	15·71
Widowed female	61,691	3,803	997	553	1·62	14·54	211,097	12,685	1,729	2,044	0·82	16·11
Divorced male	456	10	6	–	1·32	–	534	16	4	3	0·75	18·75
Divorced female	1,211	48	28	5	2·31	10·42	1,272	46	4	3	0·31	6·52
Single male	6	–	–	–	–	–	7	–	–	–	–	–
Single female	99	21	11	9	11·11	42·86	89	14	2	–	2·25	–

[1]Nine provinces only.

TABLE 22. Number of families in each tenancy class, by marital status and literacy of heads, for urban families, Canada[1], 1931

Marital Status of Head	Urban Families in Tenancy Class Having									
	Literate Head					Illiterate Head				
	Total	Owner	First Tenant	Sub and Free Tenant	Not Stated	Total	Owner	First Tenant	Sub and Free Tenant	Not Stated
TOTAL	**1,282,886**	**545,605**	**612,294**	**124,543**	**38**	**50,693**	**22,074**	**23,737**	**4,873**	**3**
Two married heads—										
Both literate	992,734	425,990	480,136	86,400	10	–	–	–	–	–
Wife illiterate	–	–	–	–	–	12,809	5,699	6,067	1,042	–
Husband illiterate	–	–	–	–	–	16,811	7,450	8,242	1,119	–
Both illiterate	–	–	–	–	–	11,085	4,866	4,871	1,343	–
One head only—										
Married male	25,343	7,902	13,888	3,541	7	1,707	466	1,066	174	1
Married female	31,186	7,157	13,619	10,400	3	839	251	389	199	–
Widowed male	40,553	21,060	13,889	5,595	1	2,136	1,134	675	327	–
Widowed female	123,146	58,851	49,679	14,533	5	4,135	1,763	1,778	593	1
Divorced male	854	254	460	140	–	14	6	4	4	–
Divorced female	1,627	324	802	500	–	33	8	12	13	–
Single male	35,698	12,077	21,652	1,896	10	950	356	554	39	1
Single female	31,745	11,990	18,169	1,538	2	174	75	79	20	–

[1]Nine provinces only.

TABLE 23. Percentage each tenancy class forms of marital class, by literacy status of heads, for urban families, Canada[1], 1931

Marital Status of Head	Owner		First Tenant		Sub and Free Tenant		Not Stated	
	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head	Literate Head	Illiterate Head
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
TOTAL	**42·5**	**43·5**	**47·7**	**46·8**	**9·7**	**9·6**	**0·003**	**0·006**
Two married heads—								
Both literate	42·9	–	48·4	–	8·7	–	0·001	–
Wife illiterate	–	44·5	–	47·4	–	8·1	–	–
Husband illiterate	–	44·3	–	49·0	–	6·7	–	–
Both illiterate	–	43·9	–	43·9	–	12·1	–	–
One head only—								
Married male	31·2	27·3	54·8	62·4	14·0	10·2	0·028	0·059
Married female	22·9	29·9	43·7	46·4	33·3	23·7	0·010	–
Widowed male	51·9	53·1	34·2	31·6	13·8	15·3	0·002	–
Widowed female	47·8	42·6	40·3	43·0	11·8	14·3	0·004	0·024
Divorced male	29·7	42·9	53·9	28·6	16·4	28·6	–	–
Divorced female	19·9	24·2	49·3	36·4	30·7	39·4	–	–
Single male	33·8	37·5	60·7	58·3	5·3	4·1	0·028	0·11
Single female	37·8	43·1	57·2	45·4	4·8	11·5	0·006	–

[1]Nine provinces only.

TABLE 24. Number and percentage illiterate of the married wage-earner heads of families living with wives, by various occupation groups, and showing average yearly earnings of heads, arranged in ascending order of percentage illiterate, Canada[3], 1931

Occupation Group[2]	Married Wage-Earner Heads of Families Living with Wives			Average Yearly Earnings of Heads in Occupation
	Engaged in Occupation	Illiterate		
		No.	P.C.	
				$
TOTAL	**760,186**	**36,140**	**4·75**	**931**
Printing, publishing, and bookbinding	9,956	5	0·05	1,673
Warehousing and storage	15,356	28	0·18	1,144
"Other" finance, insurance	1,412	3	0·22	1,871
"Other" transportation	14,716	38	0·26	1,413
Electrical apparatus (Mfg.)	1,920	7	0·36	1,187
Precious metals and electroplate (Mfg.)	1,770	7	0·40	1,258
"Other" commercial	7,785	39	0·50	1,956
Recreational service[1]	2,444	21	0·86	1,956
Animal foods (Mfg.)	7,911	91	1·15	1,028
"Other" unspecified	483	6	1·24	1,131
Chemical and allied products (Mfg.)	1,740	22	1·26	1,291
Miscellaneous products (Mfg.)	1,402	18	1·28	1,014
Vegetable foods (Mfg.)	6,595	94	1·43	1,064
Metal products other than precious or electroplate (Mfg.)	83,587	1,264	1·51	1,053
Rubber products (Mfg.)	3,249	52	1·60	844
Railway transportation	53,917	898	1·67	1,515
Electric light and power (including stationary engineers)	22,113	393	1·78	1,194
Furs and fur goods (Mfg.)	1,069	22	2·06	1,182
Personal service	42,008	868	2·07	972
Wood products (Mfg.)	13,922	289	2·08	870
Textile goods and wearing apparel (Mfg.)	9,179	201	2·19	1,000
Road transportation	41,951	941	2·24	947
Building and construction[1]	105,109	2,381	2·27	978
Water transportation	12,212	305	2·50	1,067
Non-metallic mineral products (Mfg.)	3,719	101	2·72	1,067
Leather and leather products (Mfg.)	7,126	207	2·90	829
Drinks and beverages (Mfg.)	714	21	2·94	1,222
Laundering; cleaning, dyeing, and pressing[1]	3,347	103	3·08	1,054
Textiles (Mfg.)	5,251	197	3·75	820
Pulp, paper, and paper products (Mfg.)	4,779	182	3·81	1,189
Tobacco products (Mfg.)	606	24	3·96	658
Mining, quarrying, oil and salt wells	23,772	1,528	6·43	826
Agriculture	41,217	3,146	7·63	472
Labourers and unskilled workers (not agricultural, mining or logging)	190,655	19,716	10·34	594
Logging[1]	12,315	1,996	16·21	619
Fishing, hunting, and trapping	4,879	932	19·10	519

[1]Includes managers, foremen, overseers.
[2]All occupation groups, except those indicated, are exclusive of managers, officials, overseers and foremen, positions which from their very nature preclude illiteracy.
[3]Nine provinces only.

TABLE 25. Number and percentage illiterate of the married wage-earner heads of families living with wives, by various occupation groups, and showing average yearly earnings of heads, Canada, by provinces, 1931

Occupation Group	Married Wage-Earner Heads of Families Living with Wives			Average Yearly Earnings of Heads in Occupation
	Engaged in Occupation	Illiterate		
		No.	P.C.	
				$
Prince Edward Island	3,789	134	3·64	954
Agriculture	521	36	6·91	614
Fisbing, bunting, and trapping	136	9	6·62	688
Manufacturing	319	2	0·63	1,036
Electric light and power (including stationary enginemen)	54	2	3·70	1,071
Building and construction	364	9	2·47	708
Transportation and communication	647	3	0·46	1,191
Warehousing and storage	47	–	–	943
Commercial	366	–	–	1,384
Finance, insurance	65	–	–	2,391
Service	366	3	0·84	1,616
Clerical	137	–	–	1,372
Labourers and unskilled workers (not agricultural, mining or logging)	770	70	9·09	493
Unspecified	7	–	–	1,400
Nova Scotia	49,667	2,304	4·64	948
Agriculture	1,877	125	6·66	601
Fishing, hunting, and trapping	1,411	193	13·68	484
Logging	740	76	10·27	489
Mining, qunrrying, oil and salt wells	8,278	535	6·46	728
Manufacturing	5,565	98	1·76	1,072
Electric light and power (including stationary enginemen)	1,225	31	2·53	1,034
Building and construction	4,586	115	2·51	832
Transportation and communication	7,379	147	1·99	1,186
Warehousing and storage	525	1	0·19	1,103
Commercial	2,628	–	–	1,574
Finance, insurance	594	–	–	2,610
Service	4,567	47	1·03	1,610
Clerical	1,341	–	–	1,426
Labourers and unskilled workers (not ngriculturnl, mining or logging)	8,931	936	10·48	482
Unspecified	20	–	–	1,089
New Brunswick	35,088	2,889	8·23	965
Agriculture	1,776	252	14·19	457
Fishing, hunting, and trapping	504	110	21·83	480
Logging	1,109	327	29·49	424
Mining, quarrying, oil and salt wells	485	36	7·42	700
Manufacturing	4,287	140	3·27	1,193
Electric light and power (including stntionary enginemen)	614	18	2·93	1,100
Building and construction	2,952	172	5·83	893
Transportation and communication	5,105	134	2·62	1,314
Warehousing and storage	353	1	0·28	1,173
Commercial	2,288	5	0·22	1,633
Finance, insurance	426	1	0·23	2,426
Service	3,143	47	1·50	1,509
Clerical	1,246	–	–	1,476
Labourers and unskilled workers (not agricultural, mining or logging)	10,781	1,646	15·27	480
Unspecified	19	–	–	1,805
Quebec	279,287	16,648	5·96	1,173
Agriculturc	6,574	864	13·14	643
Fishing, hunting, and trapping	262	52	19·85	464
Logging	5,605	1,191	21·25	528
Mining, quarrying, oil and salt wells	2,882	347	12·04	844
Manufacturing	51,589	1,353	2·62	1,267
Electric light and power (including stationary enginemen)	4,712	197	4·18	1,269
Building nnd construction	35,218	1,422	4·04	986
Transportation and communication	32,272	944	2·93	1,288
Warehousing and storage	2,859	15	0·52	1,152
Commercial	22,397	17	0·08	1,769
Finnnce, insurance	5,100	1	0·02	2,830
Scrvice	30,947	650	1·78	1,718
Clerical	15,165	–	–	1,506
Labourers and unskilled workers (not agricultural, mining or logging)	63,565	9,692	15·25	603
Unspecified	140	3	2·14	1,436
Ontario	416,554	8,814	2·12	1,268
Agriculture	16,283	780	4·79	558
Fishing, hunting, and trapping	838	95	11·34	640
Logging	2,060	303	14·71	719
Mining, quarrying, oil and salt wells	6,025	380	6·31	1,267
Mnnufncturing	96,803	1,009	1·04	1,245
Electric light and power (including stationary enginemen)	10,458	118	1·13	1,300
Building and construction	40,101	488	1·22	1,000
Trnnsportation and communication	51,916	543	1·05	1,364
Warehousing and storage	7,973	9	0·11	1,169

TABLE 25. Number and percentage illiterate of the married wage-earner heads of families living with wives, by various occupation groups, and showing average yearly earnings of heads, Canada, by provinces, 1931—Con.

Occupation Group	Married Wage-Earner Heads of Families Living with Wives			Average Yearly Earnings of Heads in Occupation
	Engaged in Occupation	Illiterate		
		No.	P.C.	
				$
Ontario—Con.				
Commercial	37,361	18	0·05	1,845
Finance, insurance	8,494	1	0·01	2,696
Service	49,236	261	0·53	1,846
Clerical	19,778	–	–	1,636
Labourers and unskilled workers (not agricultural, mining or logging)	68,920	4,808	6·98	624
Unspecified	308	1	0·32	1,303
Manitoba	**65,480**	**1,795**	**2·74**	**1,285**
Agriculture	3,478	261	7·50	353
Fishing, hunting, and trapping	229	84	33·68	330
Logging	149	21	14·09	652
Mining, quarrying, oil and salt wells	414	13	3·14	1,102
Manufacturing	9,268	90	0·97	1,372
Electric light and power (including stationary enginemen)	1,242	11	0·89	1,330
Building and construction	6,155	66	1·07	989
Transportation and communication	9,923	136	1·37	1,419
Warehousing and storage	1,471	2	0·14	1,458
Commercial	7,117	2	0·03	1,936
Finance, insurance	1,507	–	–	2,781
Service	8,977	28	0·31	1,728
Clerical	3,985	–	–	1,540
Labourers and unskilled workers (not agricultural, mining or logging)	11,616	1,080	9·38	532
Unspecified	49	1	2·04	1,277
Saskatchewan	**47,247**	**1,132**	**2·40**	**1,177**
Agriculture	6,923	328	6·54	346
Fishing, hunting, and trapping	86	31	36·05	364
Logging	77	4	5·19	1,258
Mining, quarrying, oil and salt wells	270	28	10·37	745
Manufacturing	3,899	24	0·62	1,314
Electric light and power (including stationary enginemen)	794	6	0·76	1,280
Building and construction	3,205	34	10·61	815
Transportation and communication	7,769	92	1·18	1,438
Warehousing and storage	864	–	–	1,446
Commercial	7,680	–	–	1,670
Finance, insurance	1,221	–	–	2,621
Service	6,096	21	0·34	1,636
Clerical	2,402	–	–	1,490
Labourers and unskilled workers (not agricultural, mining or logging)	7,041	663	8·00	499
Unspecified	20	1	5·00	1,169
Alberta	**61,129**	**835**	**1·63**	**1,287**
Agriculture	3,919	221	5·64	460
Fishing, hunting, and trapping	64	6	9·38	440
Logging	121	1	0·83	1,285
Mining, quarrying, oil and salt wells	4,208	120	2·85	977
Manufacturing	6,425	21	0·39	1,388
Electric light and power (including stationary engiaemen)	1,146	1	0·09	1,389
Building and construction	3,838	26	0·68	1,000
Transportation and communication	7,676	68	0·89	1,495
Warehousing and storage	947	–	–	1,343
Commercial	6,681	2	0·03	1,710
Finance, insurance	1,163	–	–	2,679
Service	6,945	21	0·30	1,716
Clerical	2,769	–	–	1,488
Lnbourers and unskilled workers (aot agricultural, miaing or logging)	6,298	348	5·53	598
Unspecified	29	–	–	1,309
British Columbia	**85,622**	**1,623**	**1·90**	**1,240**
Agriculture	2,844	287	10·09	654
Fishing, bunting, and trapping	1,349	352	26·09	541
Logging	2,454	73	2·97	818
Mining, qunrrying, oil and salt wells	3,366	69	2·05	945
Mnnufacturing	12,020	69	0·57	1,361
Elcctric light and power (including stationary enginemen)	2,827	9	0·32	1,221
Building and construction	8,690	49	0·56	1,005
Transportation and communication	12,644	115	0·91	1,382
Warehousing and storage	1,410	–	–	1,317
Commercial	7,598	–	–	1,687
Finance, insurance	1,733	–	–	2,317
Service	11,640	27	0·23	1,684
Clerical	4,289	–	–	1,466
Labourers and unskilled workers (not agricultural, mining or logging)	12,833	573	4·47	670
Unspecified	25	–	–	1,360

TABLE 26. Percentages illiterate of the married and single 15 years of age and over, by certain age groups, provinces and cities of 30,000 and over, 1931

Province or City	Percentages Illiterate in Age Group							
	15-20		21-34		35-64		65 and over	
	Married	Single	Married	Single	Married	Single	Married	Single
Prince Edward Island	1·56	1·09	*1·77*	1·92	*2·43*	5·60	*7·10*	8·91
Nova Scotia	2·25	1·75	*2·85*	3·34	*4·91*	7·40	*11·05*	14·64
New Brunswick	4·68	4·53	5·79	5·55	*8·85*	8·85	14·66	11·85
Quebec	3·96	1·84	2·99	2·49	6·76	6·22	20·11	12·95
Ontario	2·14	0·87	2·19	1·84	*2·77*	3·32	*5·11*	5·25
Manitoba	4·79	1·49	4·20	2·14	6·72	4·07	14·15	6·79
Saskatchewan	4·71	1·32	4·81	2·50	5·86	3·27	16·22	7·59
Alberta	4·08	1·20	4·07	2·34	4·62	2·89	11·40	4·87
British Columbia	5·73	1·38	4·31	2·37	5·30	2·99	8·49	4·30
Brantford	0·65	0·36	1·80	1·43	*2·50*	2·81	*3·15*	3·49
Calgary	1·36	0·21	*1·27*	1·63	*1·02*	3·12	1·39	1·30
Edmonton	0·95	0·35	2·26	0·94	1·81	1·46	3·44	3·07
Halifax	1·58	0·63	1·79	1·54	*3·15*	4·03	*7·35*	8·10
Hamilton	0·74	0·29	2·02	0·94	2·27	1·61	2·96	2·51
Kitchener	0·61	0·34	1·19	0·92	*1·58*	2·46	*1·90*	7·01
London	0·61	0·39	1·05	0·77	*0·88*	0·98	*1·77*	1·81
Montreal	1·86	0·57	1·85	1·04	3·78	2·36	10·62	5·89
Ottawa	1·96	0·41	1·35	0·79	2·80	1·74	7·98	7·17
Quebec	1·31	1·10	1·64	1·11	3·50	2·70	12·16	9·55
Regina	–	0·11	2·43	0·68	2·52	1·63	7·01	1·75
Saint John	*0·37*	0·52	1·27	0·64	1·95	1·59	2·68	1·93
Saskatoon	0·46	0·23	1·15	0·56	*0·71*	0·87	2·93	1·33
Toronto	1·08	0·37	1·59	1·05	1·63	1·35	2·33	1·23
Trois-Rivières	5·22	1·25	1·84	1·02	5·84	4·57	20·18	8·33
Vancouver	1·56	0·33	2·07	0·96	2·41	1·28	*1·58*	2·12
Verdun	1·91	0·27	*0·45*	0·89	*1·36*	2·42	7·07	6·77
Victoria	1·57	0·22	1·15	0·44	1·76	0·74	1·16	0·50
Windsor	1·60	0·41	2·03	1·04	2·54	2·01	4·04	3·92
Winnipeg	1·27	0·47	1·84	0·89	3·28	1·69	5·69	2·75

Figures in italics indicate the exceptional cases where the percentage illiterate is lower for the married than for the single.

TABLE 27. Percentages illiterate of the married and single females 15-20 years of age, Canada and provinces and cities of 30,000 and over, 1931

Province and City	P.C. Illiterate of Females 15-20		Province and City	P.C. Illiterate of Females 15-20	
	Married	Single		Married	Single
CANADA	**3·41**	**1·06**	Hamilton	0·71	0·29
			Kitchener	0·72	0·35
Prince Edward Island	1·19	0·82	London	0·74	0·38
Nova Scotia	2·10	1·05	Montreal	1·99	0·53
New Brunswick	4·45	2·44	Ottawa	1·82	0·42
Quebec	3·77	1·14	Quebec	1·44	1·06
Ontario	2·08	0·67	Regina	2·63	0·11
Manitoba	4·76	1·35	Saint John	0·45	0·26
Saskatchewan	4·60	1·11	Saskatoon	0·50	0·31
Alberta	4·11	0·97	Toronto	1·11	0·48
British Columbia	5·33	1·37	Trois-Rivières	4·00	0·99
			Vancouver	1·46	0·32
Brantford	0·81	0·43	Verdun	2·18	0·22
Calgary	1·47	0·15	Victoria	0·94	0·19
Edmonton	1·04	0·46	Windsor	1·70	0·53
Halifax	1·62	0·56	Winnipeg	1·27	0·68

TABLE 28. Number and percentage of the population 5-24 years of age, at school for any period, by single years of age and sex, Canada,[1] 1931 and 1921

Age Group	Population 5-24 at School for Any Period					
	Both Sexes		Male		Female	
	No.	P.C.	No.	P.C.	No.	P.C.
1931						
CANADA—						
5-24 years	**2,154,695**	**51·89**	**1,084,884**	**51·62**	**1,069,811**	**52·17**
5 "	25,082	11·29	12,336	10·94	12,746	11·64
6 "	120,128	53·13	60,278	52·64	59,850	53·65
7 "	195,998	86·97	99,111	86·85	96,887	87·09
8 "	215,802	94·45	108,276	94·48	107,526	94·42
9 "	220,040	96·15	111,231	96·13	108,809	96·16
6-9 "	*751,968*	*82·74*	*378,896*	*82·56*	*373,072*	*82·93*
10 "	225,091	97·09	113,602	97·06	111,489	97·12
11 "	212,123	97·18	106,804	97·22	105,319	97·14
12 "	203,482	96·12	103,278	96·24	100,204	96·00
13 "	188,548	92·77	95,941	93·17	92,607	92·36
14 "	172,985	83·33	87,909	83·71	85,076	82·94
10-14 "	*1,002,229*	*93·44*	*507,534*	*93·61*	*494,695*	*93·26*
15 "	136,620	66·67	67,820	65·71	68,800	67·65
16 "	99,111	45·98	47,682	43·84	51,429	48·17
17 "	59,921	28·49	27,561	25·92	32,360	31·12
18 "	35,006	16·62	16,615	15·65	18,391	17·60
19 "	18,970	9·63	9,679	9·66	9,291	9·60
15-19 "	*349,628*	*33·67*	*169,357*	*32·28*	*180,271*	*35·09*
20-24 "	25,788	2·83	16,761	3·62	9,027	2·02
1921						
CANADA—						
5-24 years	**1,710,581**	**49·27**	**857,749**	**49·22**	**852,832**	**49·32**
5 "	30,315	14·06	14,950	13·67	15,365	14·47
6 "	112,816	51·85	56,521	51·67	56,295	52·03
7 "	174,055	81·94	87,680	82·11	86,375	81·77
8 "	188,609	90·64	94,457	90·79	94,152	90·50
9 "	180,703	93·12	91,825	93·15	88,878	93·09
6-9 "	*656,183*	*78·86*	*330,483*	*78·91*	*325,700*	*78·80*
10 "	182,756	94·09	92,042	94·17	90,714	94·01
11 "	169,266	94·31	85,168	94·44	84,098	94·17
12 "	174,150	92·74	88,631	92·91	85,519	92·58
13 "	154,165	88·07	77,836	88·28	76,329	87·86
14 "	129,004	73·39	65,333	73·09	63,671	73·70
10-14 "	*809,341*	*88·71*	*409,010*	*88·75*	*400,331*	*88·68*
15 "	84,055	51·29	40,576	49·37	43,479	53·23
16 "	54,960	32·63	24,842	29·36	30,118	35·93
17 "	31,325	19·59	13,744	17·04	17,581	22·18
18 "	18,170	11·23	8,105	10·00	10,065	12·46
19 "	10,081	6·86	5,116	6·88	4,965	6·84
15-19 "	*198,591*	*24·79*	*92,383*	*22·93*	*106,208*	*26·67*
20-24 "	16,151	2·27	10,923	3·11	5,228	1·45

[1]Nine provinces only.

TABLE 29. School attendance of the population 5-19 years of age, by months at school, rural and urban, Canada and provinces, 1931 and 1921

Province	Population 5-19 Years of Age					
	Total	At School for Any Period		No. at School by Months		
		No.	P.C.	1-3	4-6	7-9
1931						
CANADA	**3,242,054**	**2,128,907**	**65·67**	**46,643**	**67,938**	**2,014,326**
Rural	1,615,122	1,002,700	62·08	36,605	47,352	918,743
Urban	1,626,932	1,126,207	69·22	10,038	20,586	1,095,583
Prince Edward Island	27,869	17,999	64·58	736	1,305	15,958
Rural	21,386	13,645	63·80	667	1,179	11,799
Urban	6,483	4,354	67·16	69	126	4,159
Nova Scotia	167,023	113,526	67·97	2,896	6,001	104,629
Rural	92,512	61,139	66·09	2,426	4,778	53,935
Urban	74,511	52,387	70·31	470	1,223	50,694
New Brunswick	139,974	88,112	62·95	2,666	5,555	79,891
Rural	100,379	61,194	60·96	2,551	5,215	53,428
Urban	39,595	26,918	67·98	115	340	26,463
Quebec	969,510	582,094	60·04	12,064	15,945	554,085
Rural	401,264	226,659	56·49	8,644	9,158	208,857
Urban	568,246	355,435	62·55	3,420	6,787	345,228
Ontario	970,087	675,446	69·63	13,085	14,495	647,866
Rural	403,181	260,865	64·70	9,238	7,282	244,345
Urban	566,906	414,581	73·13	3,847	7,213	403,521
Manitoba	229,256	152,645	66·58	3,998	4,286	144,361
Rural	136,115	84,951	62·41	3,159	3,246	78,546
Urban	93,141	67,694	72·68	839	1,040	65,815
Saskatchewan	322,278	214,032	66·41	7,022	11,270	195,740
Rural	229,159	144,394	63·01	6,375	10,295	127,724
Urban	93,119	69,638	74·78	647	975	68,016
Alberta	234,739	159,714	68·04	3,138	4,800	151,776
Rural	150,694	96,791	64·23	2,896	4,122	89,773
Urban	84,045	62,923	74·87	242	678	62,003
Britisb Columbia	181,318	125,339	69·13	1,038	4,281	120,020
Rural	80,432	53,062	65·97	649	2,077	50,336
Urban	100,886	72,277	71·64	389	2,204	69,684
1921						
CANADA	**2,761,092**[1]	**1,694,430**	**61·37**	**72,529**	**133,404**	**1,488,497**
Rural	1,478,847[1]	858,748	58·07	56,835	104,584	697,329
Urban	1,282,245	835,682	65·17	15,694	28,820	791,168
Prince Edward Island	27,851	16,895	60·66	1,351	2,665	12,879
Rural	22,194	13,250	59·70	1,285	2,503	9,462
Urban	5,657	3,645	64·43	66	162	3,417
Nova Scotia	168,990	103,315	61·14	4,755	10,138	88,422
Rural	96,062	56,360	58·67	4,129	8,635	43,596
Urban	72,928	46,955	64·39	626	1,503	44,826
New Brunswick	129,731	73,367	56·55	4,803	10,950	57,614
Rural	92,397	50,320	54·46	4,571	10,292	35,457
Urban	37,334	23,047	61·73	232	658	22,157
Quebec	824,400	486,409	59·00	14,527	20,940	450,942
Rural	396,469	224,104	56·52	10,421	13,743	199,940
Urban	427,931	262,305	61·30	4,106	7,197	251,002
Ontario	837,604	534,339	63·79	18,759	27,772	487,808
Rural	374,554	225,780	60·28	12,623	16,487	196,670
Urban	463,050	308,559	66·64	6,136	11,285	291,138
Manitoba	200,660	125,457	62·52	6,095	10,838	108,524
Rural	123,109	71,789	58·31	4,609	8,893	58,287
Urban	77,551	53,668	69·20	1,486	1,945	50,237
Saskatchewan	250,886	152,545	60·80	12,370	28,359	111,816
Rural	184,222	105,415	57·22	10,639	26,094	68,682
Urban	66,664	47,130	70·70	1,731	2,265	43,134
Alberta	183,740	113,786	61·93	8,021	16,383	89,382
Rural	117,367	67,892	57·85	7,246	14,462	46,184
Urban	66,373	45,894	69·15	775	1,921	43,198
British Columbia	137,159	88,317	64·39	1,848	5,359	81,110
Rural	72,402	43,838	60·55	1,312	3,475	39,051
Urban	64,757	44,479	68·69	536	1,884	42,059

[1]Canada total and rural total include personnel of tbe Royal Canadian Navy, not included in any of tbe provinces.

TABLE 30. School attendance of the population 5-19 years of age, by age groups and nativity, Canada[1], 1931 and 1921

Nativity and Age	Total	At School for Any Period		No. at School by Months			
		No.	P.C.	Under 1	1-3	4-6	7-9
1931							
5-19 years	**3,242,054**	**2,128,907**	**65·67**	**1,010**	**45,633**	**67,938**	**2,014,326**
5- 9 years	1,131,044	777,050	68·70	792	35,149	32,193	708,916
10-14 "	1,072,647	1,002,229	93·44	120	6,693	24,030	971,386
15-19 "	1,038,363	349,628	33·67	98	3,791	11,715	334,024
Canadian born	**3,017,687**	**1,997,833**	**66·20**	**939**	**42,749**	**63,354**	**1,890,791**
5- 9 years	1,069,611	733,793	68·60	745	33,171	30,128	669,749
10-14 "	1,004,388	937,094	93·30	106	6,127	22,502	908,359
15-19 "	943,688	326,946	34·65	88	3,451	10,724	312,683
British born	**103,163**	**60,087**	**58·24**	**29**	**876**	**1,527**	**57,655**
5- 9 years	20,529	16,173	78·78	17	547	608	15,001
10-14 "	35,169	33,894	96·37	7	208	536	33,143
15-19 "	47,465	10,020	21·11	5	121	383	9,511
Foreign born	**121,204**	**70,987**	**58·57**	**42**	**2,008**	**3,057**	**65,880**
5- 9 years	40,904	27,084	66·21	30	1,431	1,457	24,166
10-14 "	33,090	31,241	94·41	7	358	992	29,884
15-19 "	47,210	12,662	26·82	5	219	608	11,830
1921							
5-19 years	**2,761,092**	**1,694,430**	**61·37**	**-**	**72,529[2]**	**133,404**	**1,488,497**
5- 9 years	1,047,694	686,498	65·52	-	50,795	61,950	573,753
10-14 "	912,305	809,341	88·71	-	16,288	55,558	737,495
15-19 "	801,093	198,591	24·79	-	5,446	15,896	177,249
Canadian born	**2,446,354**	**1,529,809**	**62·53**	**-**	**65,213**	**116,434**	**1,348,162**
5- 9 years	1,000,613	652,713	65·23	-	48,229	58,190	546,294
10-14 "	799,393	709,939	88·75	-	12,918	45,950	651,071
15-19 "	645,848	167,157	25·88	-	4,066	12,294	150,797
British born	**151,422**	**75,312**	**49·74**	**-**	**1,928**	**4,446**	**68,938**
5- 9 years	19,082	14,200	74·42	-	724	1,053	12,423
10-14 "	53,630	47,747	89·03	-	836	2,322	44,589
15-19 "	78,710	13,365	16·98	-	368	1,071	11,926
Foreign born	**163,316**	**89,309**	**54·68**	**-**	**5,388**	**12,524**	**71,307**
5- 9 years	27,999	19,585	69·95	-	1,842	2,707	15,036
10-14 "	58,782	51,655	87·88	-	2,534	7,286	41,835
15-19 "	76,535	18,069	23·61	-	1,012	2,531	14,526

[1]Nine provinces only.

[2]In 1921 the 1-3 months column includes the "under 1". The numbers involved are too small to be significant and are shown separatcly in 1931 as a matter of interest only.

TABLE 31. Average number of years spent "at school" and average number of years in actual attendance by the population 5-24 years of age, by certain age groups, Canada and provinces, 1911-1931

Province	Average Years									
	Spent "at School" at Age					In Actual Attendance at Age				
	5-24	5-6	7-14	15-17	18-24	5-24	5-6	7-14	15-17	18-24
1911										
CANADA	**7·96**	**0·58**	**6·38**	**0·81**	**0·19**	**6·58**	**0·42**	**5·34**	**0·67**	**0·15**
Prince Edward Island	8·46	0·50	6·77	1·02	0·17	6·71	0·32	5·47	0·79	0·13
Nova Scotia	8·50	0·64	6·64	1·00	0·22	6·83	0·44	5·41	0·80	0·18
New Brunswick	8·07	0·42	6·42	1·02	0·21	6·46	0·29	5·20	0·81	0·16
Quebec	7·89	0·68	6·46	0·60	0·15	6·77	0·53	5·59	0·52	0·13
Ontario	8·50	0·65	6·75	0·87	0·23	7·00	0·46	5·69	0·66	0·19
Manitoba	7·60	0·42	5·99	0·98	0·21	6·15	0·29	4·92	0·78	0·16
Saskatchewan	6·62	0·40	5·36	0·75	0·11	4·96	0·26	4·06	0·56	0·08
Alberta	6·46	0·33	5·05	0·91	0·17	4·92	0·22	3·90	0·68	0·12
British Columbia	7·55	0·37	6·04	0·97	0·17	6·32	0·26	5·11	0·81	0·14
1921										
CANADA	**9·13**	**0·67**	**7·12**	**1·04**	**0·30**	**7·58**	**0·47**	**5·98**	**0·88**	**0·25**
Prince Edward Island	9·10	0·57	7·06	1·18	0·29	7·13	0·34	5·64	0·91	0·24
Nova Scotia	9·12	0·63	7·00	1·18	0·31	7·55	0·44	5·86	0·99	0·26
New Brunswick	8·40	0·45	6·66	1·05	0·24	6·68	0·30	5·34	0·84	0·20
Quebec	8·67	0·73	6·92	0·79	0·23	7·43	0·56	5·98	0·69	0·20
Ontario	9·59	0·79	7·34	1·09	0·37	8·15	0·57	6·34	0·93	0·31
Manitoba	9·27	0·56	7·23	1·18	0·30	7·72	0·37	6·11	0·99	0·25
Saskatchewan	8·93	0·54	7·12	1·04	0·23	6·95	0·32	5·62	0·82	0·19
Alberta	9·34	0·45	7·22	1·37	0·30	7·46	0·28	5·82	1·11	0·25
British Columbia	9·75	0·53	7·39	1·44	0·39	8·36	0·39	6·41	1·23	0·33
1931										
CANADA	**9·89**	**0·64**	**7·44**	**1·41**	**0·40**	**8·55**	**0·48**	**6·49**	**1·23**	**0·35**
Prince Edward Island	9·71	0·64	7·47	1·25	0·35	8·12	0·43	6·34	1·05	0·30
Nova Scotia	10·22	0·82	7·49	1·51	0·40	8·73	0·62	6·47	1·30	0·34
New Brunswick	9·39	0·49	7·23	1·30	0·37	7·96	0·35	6·18	1·11	0·32
Quebec	8·98	0·57	7·13	1·01	0·27	7·78	0·44	6·22	0·88	0·24
Ontario	10·60	0·83	7·65	1·62	0·50	9·20	0·63	6·72	1·42	0·43
Manitoba	10·07	0·61	7·53	1·52	0·41	8·68	0·42	6·58	1·32	0·36
Saskatchewan	9·88	0·50	7·55	1·43	0·40	8·39	0·33	6·49	1·23	0·34
Alberta	10·18	0·43	7·58	1·69	0·48	8·82	0·32	6·60	1·48	0·42
Britisb Columbia	10·50	0·62	7·59	1·81	0·48	9·15	0·49	6·67	1·58	0·41

TABLE 32. School attendance of the population 5-24 years of age, by single years of age, sex and months at school, Canada[1], 1931 and 1921

Age	1931							1921					
	Total	At School for Any Period		No. at School by Months				Total	At School for Any Period		No. at School by Months		
		No.	P.C.	Under 1	1-3	4-6	7-9		No.	P.C.	1-3	4-6	7-9
BOTH SEXES													
5-24 years	**4,152,175**	**2,154,695**	**51·89**	**1,024**	**46,010**	**69,089**	**2,038,572**	**3,471,744**	**1,710,581**	**49·27**	**72,770**	**134,100**	**1,503,711**
5 "	222,257	25,082	11·29	164	6,508	3,179	15,231	215,572	30,315	14·06	9,170	4,639	16,506
6 "	226,086	120,128	53·13	328	16,733	9,629	93,438	217,581	112,816	51·85	20,033	14,996	77,787
7 "	225,364	195,998	86·97	204	7,578	8,137	180,079	212,413	174,055	81·94	11,745	15,962	146,348
8 "	228,481	215,802	94·45	68	2,656	6,193	206,885	208,083	188,609	90·64	5,788	14,185	168,636
9 "	228,856	220,040	96·15	28	1,674	5,055	213,283	194,045	180,703	93·12	4,059	12,168	164,476
6-9 "	*908,787*	*751,968*	*82·74*	*628*	*28,641*	*29,014*	*693,685*	*832,122*	*656,183*	*78·86*	*41,625*	*57,311*	*557,247*
10 "	231,834	225,091	97·09	17	1,399	4,857	218,818	194,229	182,756	94·09	3,490	11,727	167,539
11 "	218,283	212,123	97·18	33	1,211	4,497	206,382	179,487	169,266	94·31	3,063	10,703	155,500
12 "	211,696	203,482	96·12	23	1,288	4,689	197,482	187,773	174,150	92·74	3,236	11,738	159,176
13 "	203,240	188,548	92·77	25	1,392	4,861	182,270	175,043	154,165	88·07	3,148	10,788	140,229
14 "	207,594	172,985	83·33	22	1,403	5,126	166,434	175,773	129,004	73·39	3,351	10,602	115,051
10-14 "	*1,072,647*	*1,002,229*	*93·44*	*120*	*6,693*	*24,030*	*971,386*	*912,305*	*809,341*	*88·71*	*16,288*	*55,558*	*737,495*
15 "	204,906	136,620	66·67	29	1,402	4,552	130,637	163,871	84,055	51·29	2,394	7,162	74,499
16 "	215,532	99,111	45·98	34	1,040	3,245	94,792	168,439	54,960	32·63	1,470	4,332	49,158
17 "	210,297	59,921	28·49	13	678	1,868	57,362	159,925	31,325	19·59	864	2,270	28,191
18 "	210,667	35,006	16·62	16	398	1,225	33,367	161,860	18,170	11·23	448	1,314	16,408
19 "	196,961	18,970	9·63	6	273	825	17,866	146,998	10,081	6·86	270	818	8,993
15-19 "	*1,038,363*	*349,628*	*33·67*	*98*	*3,791*	*11,715*	*334,024*	*801,093*	*198,591*	*24·79*	*5,446*	*15,896*	*177,249*
20-24 "	910,121	25,788	2·83	14	377	1,151	24,246	710,652	16,151	2·27	241	696	15,214
MALE													
5-24 years	**2,101,590**	**1,084,884**	**51·62**	**494**	**22,882**	**35,198**	**1,026,310**	**1,742,642**	**857,749**	**49·22**	**36,732**	**68,507**	**752,510**
5 "	112,729	12,336	10·94	80	3,181	1,580	7,495	109,391	14,950	13·67	4,518	2,301	8,131
6 "	114,520	60,278	52·64	154	8,451	4,819	46,854	109,394	56,521	51·67	10,123	7,490	38,908
7 "	114,115	99,111	86·85	98	3,720	4,009	91,284	106,780	87,680	82·11	5,764	8,031	73,885
8 "	114,604	108,276	94·48	40	1,253	3,007	103,976	104,043	94,457	90·79	2,749	6,893	84,815
9 "	115,703	111,231	96·13	14	820	2,435	107,962	98,574	91,825	93·15	2,011	6,081	83,733
6-9 "	*458,942*	*378,896*	*82·56*	*506*	*14,244*	*14,270*	*350,076*	*418,791*	*330,483*	*78·91*	*20,647*	*28,495*	*281,841*
10 "	117,038	113,602	97·06	4	669	2,427	110,502	97,736	92,042	94·17	1,718	5,933	84,391
11 "	109,860	106,804	97·22	14	585	2,277	103,928	90,186	85,168	94·44	1,536	5,390	78,242
12 "	107,312	103,278	96·24	11	661	2,436	100,170	95,399	88,631	92·91	1,685	6,087	80,859
13 "	102,969	95,941	93·17	11	703	2,587	92,640	88,166	77,836	88·28	1,657	5,717	70,462
14 "	105,013	87,909	83·71	16	757	2,816	84,320	89,381	65,333	73·09	1,820	5,891	57,622
10-14 "	*542,192*	*507,534*	*93·61*	*56*	*3,375*	*12,543*	*491,560*	*460,868*	*409,010*	*88·76*	*8,416*	*29,018*	*371,576*
15 "	103,206	67,820	65·71	16	714	2,479	64,611	82,193	40,576	49·37	1,378	3,972	35,226
16 "	108,769	47,682	43·84	16	537	1,727	45,402	84,620	24,842	29·36	832	2,233	21,777
17 "	106,316	27,561	25·92	5	315	907	26,334	80,650	13,744	17·04	456	1,051	12,237
18 "	106,163	16,615	16·65	7	167	584	15,857	81,061	8,105	10·00	216	589	7,300
19 "	100,153	9,679	9·66	1	133	410	9,135	74,378	5,116	6·88	125	412	4,579
15-19 "	*524,607*	*169,357*	*32·28*	*45*	*1,866*	*6,107*	*161,339*	*402,902*	*92,383*	*22·93*	*3,007*	*8,257*	*81,119*
20-24 "	463,120	16,761	3·62	7	216	698	15,840	350,690	10,923	3·11	144	436	10,343
FEMALE													
5-24 years	**2,050,585**	**1,069,811**	**52·17**	**530**	**23,128**	**33,891**	**1,012,262**	**1,729,102**	**852,832**	**49·32**	**36,038**	**65,593**	**751,201**
5 "	109,528	12,746	11·64	84	3,327	1,599	7,736	106,181	15,365	14·47	4,652	2,338	8,375
6 "	111,566	59,850	53·65	174	8,282	4,810	46,584	108,187	56,295	52·03	9,910	7,506	38,879
7 "	111,249	96,887	87·09	106	3,858	4,128	88,795	105,633	86,375	81·77	5,981	7,931	72,463
8 "	113,877	107,526	94·42	28	1,403	3,186	102,909	104,040	94,152	90·50	3,039	7,292	83,821
9 "	113,153	108,809	96·16	14	854	2,620	105,321	95,471	88,878	93·09	2,048	6,087	80,743
6-9 "	*449,845*	*373,072*	*82·93*	*322*	*14,397*	*14,744*	*343,609*	*413,331*	*325,700*	*78·80*	*20,978*	*28,816*	*275,906*
10 "	114,796	111,489	97·12	13	730	2,430	108,316	96,493	90,714	94·01	1,772	5,794	83,148
11 "	108,423	105,319	97·14	19	626	2,220	102,454	89,301	84,098	94·17	1,527	5,313	77,258
12 "	104,384	100,204	96·00	12	627	2,253	97,312	92,374	85,519	92·58	1,551	5,651	78,317
13 "	100,271	92,607	92·36	14	689	2,274	89,630	86,877	76,329	87·86	1,491	5,071	69,767
14 "	102,581	85,076	82·94	6	646	2,310	82,114	86,392	63,671	73·70	1,531	4,711	57,429
10-14 "	*550,455*	*484,695*	*93·26*	*64*	*3,318*	*11,487*	*479,326*	*451,437*	*400,331*	*88·68*	*7,872*	*26,540*	*365,919*
15 "	101,700	68,800	67·65	13	688	2,073	66,026	81,678	43,479	53·23	1,016	3,190	39,273
16 "	106,763	51,429	48·17	18	503	1,518	49,390	83,819	30,118	35·93	638	2,099	27,381
17 "	103,981	32,360	31·12	8	363	961	31,028	79,275	17,581	22·18	408	1,219	15,954
18 "	104,504	18,391	17·60	9	231	641	17,510	80,799	10,065	12·46	232	725	9,108
19 "	96,808	9,291	9·60	5	140	415	8,731	72,620	4,965	6·84	145	406	4,414
15-19 "	*513,756*	*180,271*	*35·09*	*53*	*1,925*	*5,608*	*172,685*	*398,191*	*106,208*	*26·67*	*2,439*	*7,639*	*96,130*
20-24 "	447,001	9,027	2·02	7	161	453	8,406	359,962	5,228	1·48	97	260	4,871

[1]Nine provinces only.

TABLE 33. Average school grade reached and distribution of improvement between grades, for all ages and for ages 13 and 14, certain provinces of Canada, 1931 and 1924

Province	Average Grade		Improvement 1924-31												
	1931	1924	Total	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
ALL AGES															
Prince Edward Island	4·64	4·42	0·22	0·10	0·02	−0·03	−0·01	−0·01	−0·03	–	0·07	0·05	0·06	–	–
Nova Scotia	4·52	4·26	0·26	0·07	0·02	0·01	–	–	0·01	0·03	0·03	0·02	0·04	0·03	–
New Brunswick	4·49	4·40	0·09	0·03	−0·01	0·01	–	–	–	−0·01	0·01	0·02	0·02	0·02	–
Ontario	4·84	4·51	0·33	0·04	0·01	0·04	−0·01	–	–	–	−0·02	0·08	0·07	0·08	0·04
Manitoba	4·58	3·98	0·60	0·17	0·04	0·01	–	–	0·02	0·10	0·04	0·07	0·07	0·05	0·03
Saskatchewan	4·70	4·08	0·62	0·19	0·02	0·01	–	0·01	0·02	0·04	0·06	0·07	0·08	0·05	0·07
Alberta	4·92	4·39	0·53	0·14	0·02	0·02	–	–	0·01	0·03	0·04	0·09	0·06	0·07	0·05
13 YEARS OF AGE															
Prince Edward Island	6·52	6·14	0·38	0·01	0·07	0·02	–	0·04	0·01	0·02	0·12	0·05	0·04	–	–
Nova Scotia	6·14	5·76	0·38	0·04	0·06	0·05	0·04	0·02	–	0·06	0·09	0·01	0·01	–	–
New Brunswick	6·17	6·02	0·15	−0·02	−0·01	0·03	0·02	0·02	–	–	0·07	0·03	0·01	–	–
Ontario	6·83	6·71	0·12	0·04	0·02	0·04	−0·01	−0·02	−0·01	–	−0·10	0·09	0·05	0·02	–
Manitoba	6·22	5·92	0·30	−0·01	0·05	0·09	0·08	0·03	–	0·15	−0·01	−0·06	−0·01	−0·01	–
Saskatchewan	6·51	5·98	0·53	0·05	0·05	0·08	0·09	0·03	–	0·06	0·10	0·04	0·03	–	–
Alberta	6·53	6·24	0·29	0·03	0·04	0·05	0·06	0·04	0·01	0·06	0·04	−0·02	−0·01	−0·01	–
14 YEARS OF AGE															
Prince Edward Island	7·36	6·95	0·41	0·02	0·02	0·01	0·03	0·08	0·04	–	0·07	0·07	0·07	–	–
Nova Scotia	6·96	6·57	0·39	0·04	0·02	0·04	0·06	0·05	0·01	–	0·06	0·06	0·05	0·01	−0·01
New Brunswick	6·97	6·80	0·17	−0·01	0·01	0·02	0·01	0·04	0·02	–	0·06	–	0·02	–	–
Ontario	7·67	7·51	0·16	−0·02	0·01	0·02	0·02	–	–	–	−0·07	0·02	0·10	0·08	–
Manitoba	7·13	6·74	0·39	0·03	0·04	0·04	0·10	0·07	0·02	0·02	0·05	–	0·02	–	–
Saskatchewan	7·33	6·71	0·62	0·03	0·04	0·07	0·11	0·07	0·02	0·01	0·07	0·10	0·07	0·03	–
Alberta	7·37	7·02	0·35	0·02	0·04	0·05	0·05	0·03	0·04	–	0·06	0·08	−0·02	–	–

TABLE 34. Percentages leaving school and estimated number of full years spent at school, at each age over 10, Canada, by provinces, 1931

Age	Prince Edward Island		Nova Scotia		New Brunswick		Quebec		Ontario	
	P.C. Leaving School	Estimated Full Years Spent at School	P.C. Leaving School	Estimated Full Years Spent at School	P.C. Leaving School	Estimated Full Years Spent at School	P.C. Leaving School	Estimated Full Years Spent at School	P.C. Leaving School	Estimated Full Years Spent at School
At 11 years	1·22	4·43	0·59	4·67	0·98	4·29	2·74	4·51	0·52	4·84
" 12 "	1·66	5·26	2·16	5·51	4·97	5·11	8·34	5·33	1·01	5·71
" 13 "	11·11	6·07	7·89	6·33	12·41	5·88	18·16	6·08	6·45	6·56
" 14 "	22·25	6·78	15·46	7·08	17·23	6·54	19·34	6·67	13·63	7·36
" 15 "	22·99	7·29	23·46	7·69	18·37	7·05	16·93	7·10	22·13	8·03
" 16 "	16·82	7·63	18·83	8·11	15·81	7·41	12·70	7·38	21·93	8·50
" 17 "	10·94	7·82	13·04	8·38	11·71	7·64	9·21	7·55	12·51	8·78
" 18 "	3·96	7·93	7·69	8·52	7·07	7·78	4·74	7·64	7·84	8·95
" 19 "	5·68	8·00	6·31	8·60	6·14	7·85	4·01	7·70	8·39	9·05
" 20-24 years	13·77	8·12	3·67	8·72	5·31	7·97	3·83	7·79	5·59	9·21

Age	Manitoba		Saskatchewan		Alberta		British Columbia	
	P.C. Leaving School	Estimated Full Years Spent at School	P.C. Leaving School	Estimated Full Years Spent at School	P.C. Leaving School	Estimated Full Years Spent at School	P.C. Leaving School	Estimated Full Years Spent at School
At 11 years	0·34	4·54	0·14	4·34	−0·16	4·40	0·11	4·64
" 12 "	1·14	5·39	0·68	5·19	0·66	5·25	0·23	5·49
" 13 "	8·67	6·23	4·38	6·02	2·87	6·10	3·04	6·34
" 14 "	17·86	6·99	23·87	6·82	17·11	6·92	10·01	7·16
" 15 "	19·66	7·60	24·01	7·40	22·83	7·60	22·87	7·88
" 16 "	19·69	8·04	16·38	7·79	17·94	8·07	21·66	8·40
" 17 "	13·64	8·31	11·39	8·04	15·14	8·40	17·98	8·74
" 18 "	8·17	8·47	7·26	8·20	10·39	8·59	9·90	8·92
" 19 "	7·21	8·55	8·56	8·29	9·66	8·70	8·72	9·02
" 20-24 years	3·62	8·67	3·33	8·39	3·56	8·82	5·48	9·15

TABLE 35. Population, number of persons attending school (all ages) and average number of months at school during the year in the rural parts of the counties or census divisions of Canada, 1931

Number on Map	County or Census Division	Rural Population		Average Number Months at School in Year
		Total	At School (all ages)	
	Prince Edward Island—			
1	Kings	16,469	3,451	7·36
2	Prince	26,154	5,739	7·47
3	Queens	25,030	4,584	7·47
	Nova Scotia—			
1	Annapolis	13,528	2,812	7·59
2	Antigonish	8,309	1,888	7·47
3	Cape Breton	23,154	5,258	7·61
4	Colchester	16,347	3,820	7·45
5	Cumberland	18,509	4,189	7·55
6	Digby	16,941	3,767	7·67
7	Guysborough	12,893	2,308	7·32
8	Halifax	31,829	7,113	7·53
9	Hants	16,657	3,789	7·50
10	Inverness	16,518	3,778	7·18
11	Kings	18,669	4,249	7·57
12	Lunenburg	24,620	5,155	7·53
13	Pictou	15,447	3,213	7·50
14	Queens	7,943	1,432	7·59
15	Richmond	11,098	2,327	7·53
16	Shelburne	9,131	2,025	7·60
17	Victoria	8,009	1,619	7·39
18	Yarmouth	12,590	2,864	7·76
	New Brunswick—			
1	Albert	7,679	1,653	7·55
2	Carleton	16,630	4,035	7·35
3	Charlotte	13,871	2,835	7·55
4	Gloucester	38,614	8,219	7·44
5	Kent	23,478	5,020	7·41
6	Kings	17,040	3,686	7·57
7	Madawaska	18,097	3,865	7·52
8	Northumberland	26,724	6,064	7·31
9	Queens	11,219	2,416	7·44
10	Restigouche	19,380	4,122	7·45
11	St. John	14,099	2,930	7·87
12	Sunbury	6,999	1,567	7·51
13	Victoria	13,351	3,238	7·48
14	Westmorland	31,963	7,610	7·68
15	York	20,135	4,654	7·43
	Quebec—			
1	Abitibi	19,421	3,691	7·25
2	Argenteuil	13,350	3,229	7·64
3	Arthabaska	16,748	4,022	7·69
4	Bagot	11,965	2,779	7·69
5	Beauce	33,366	7,637	7·66
6	Beauharnois	6,009	1,204	7·79
7	Bellechasse	20,714	5,009	7·56
8	Berthier	15,237	3,698	7·76
9	Bonaventure	32,432	6,783	7·71
10	Brome	8,866	1,662	7·62
11	Chambly	9,420	2,100	7·78
12	Champlain	29,243	6,801	7·70
13	Charlevoix	15,347	3,233	7·70
14	Chateauguay	9,548	1,970	7·74
15	Chicoutimi	18,333	4,049	7·63
16	Compton	14,322	3,075	7·61
17	Deux-Montagnes	11,782	2,449	7·75
18	Dorchester	26,782	6,001	7·61
19	Drummond	14,826	3,460	7·78
20	Frontenac	20,345	4,579	7·65
21	Gaspé	41,818	8,519	7·63
23	Hull	25,709	4,859	7·56
24	Huntingdon	10,358	2,004	7·66
25	Ihorville	5,898	1,340	7·75
26	Joliette	15,652	3,575	7·65
27	Kamouraska	21,737	5,167	7·64
28	Labelle	14,783	2,994	7·55
29	Lac-St-Jean	30,614	6,935	7·72
30	Laprairie	10,002	2,106	7·81
31	L'Assomption	9,945	2,035	7·66
33	Lévis	12,915	2,688	7·77
34	L'Islot	18,669	3,969	7·63
35	Lotbinière	16,878	3,750	7·66
36	Maskinongé	12,970	3,050	7·70
37	Matane	27,826	5,936	7·53
38	Mégantic	17,191	3,777	7·56
39	Missisquoi	10,042	1,922	7·78
40	Montcalm	10,780	2,379	7·68
41	Montmagny	16,312	3,473	7·72

TABLE 35. Population, number of persons attending school (all ages) and average number of months at school during the year in the rural parts of the counties or census divisions of Canada, 1931—Con.

Number on Map	County or Census Division	Rural Population		Average Number Months at School in Year
		Total	At School (all ages)	
	Quebec—Con.			
42	Montmorency	13,891	2,968	7·79
43	Montreal Island	12,100	1,660	7·82
44	Jesus Island	10,242	1,875	7·88
45	Napierville	5,542	1,171	7·71
46	Nicolet	21,845	5,223	7·69
47	Papineau	17,147	3,530	7·51
48	Pontiac	16,661	3,046	7·02
49	Portneuf	22,190	4,644	7·73
50	Quebec	20,680	3,596	7·72
51	Richelieu	8,081	1,702	7·80
52	Richmond	11,850	2,474	7·76
53	Rimouski	22,202	5,030	7·66
54	Rouville	8,690	1,831	7·69
55	Saguenay	20,641	3,131	7·45
56	Shefford	13,094	2,720	7·73
57	Sherbrooke	6,452	1,212	7·70
58	Soulanges	5,873	1,268	7·68
59	Stanstead	9,793	2,005	7·61
60	St-Hyacinthe	9,072	1,941	7·61
61	St-Jean	5,700	1,126	7·61
62	St-Maurice	15,582	3,808	7·74
63	Temiskaming	11,521	2,534	7·63
64	Témiscouata	36,066	8,591	7·50
65	Terrebonne	18,058	3,967	7·71
66	Vaudreuil	6,576	1,406	7·85
67	Verchères	8,026	1,666	7·65
68	Wolfe	12,179	2,821	7·70
69	Yamaska	12,740	3,023	7·67
	Ontario—			
1	Addington	6,425	1,184	7·64
2	Algoma	18,058	3,783	7·65
3	Brant	19,232	3,855	7·77
4	Bruce	25,886	4,726	7·72
5	Carleton	35,126	7,716	7·78
6	Cochrane	32,562	5,422	7·50
7	Dufferin	10,610	2,001	7·47
8	Dundas	11,702	2,449	7·82
9	Durham	15,656	2,843	7·69
10	Elgin	21,960	4,158	7·76
11	Essex	39,808	8,768	7·73
12	Frontenac	19,576	3,840	7·59
13	Glengarry	15,275	3,253	7·74
14	Grenville	9,926	1,848	7·66
15	Grey	33,551	6,178	7·61
16	Haldimand	14,015	2,759	7·72
17	Haliburton	5,997	1,255	7·49
18	Halton	13,673	2,530	7·72
19	Hastings	30,946	6,287	7·56
20	Huron	31,464	5,728	7·61
21	Kenora	10,344	1,706	7·83
22	Kent	34,594	6,943	7·68
23	Lambton	27,160	5,149	7·64
24	Lanark	14,528	2,699	7·69
25	Leeds	20,019	3,450	7·71
26	Lennox	8,173	1,476	7·69
27	Lincoln	20,747	4,174	7·77
28	Manitoulin	8,961	1,675	7·64
29	Middlesex	40,735	7,796	7·75
30	Muskoka	12,727	2,600	7·63
31	Nipissing	18,170	3,892	7·62
32	Norfolk	21,403	3,846	7·63
33	Northumberland	19,541	3,551	7·63
34	Ontario	27,023	5,157	7·69
35	Oxford	25,794	4,673	7·64
36	Parry Sound	18,475	3,987	7·55
37	Peel	19,772	3,836	7·74
38	Perth	23,972	4,341	7·61
39	Peterborough	18,370	3,693	7·64
40	Prescott	16,918	3,900	7·76
41	Prince Edward	11,466	2,028	7·70
42	Rainy River	10,487	2,157	7·70
43	Renfrew	30,791	6,425	7·57
44	Russell	15,374	3,824	7·72
45	Simcoe	43,158	8,358	7·67
46	Stormont	21,012	4,178	7·77
47	Sudbury	32,884	6,998	7·69
48	Thunder Bay	19,023	3,395	7·75
49	Timiskamiag	25,417	4,895	7·63
50	Victoria	15,415	2,821	7·71
51	Waterloo	23,516	4,617	7·76

TABLE 35. Population, number of persons attending school (all ages) and average number of months at school during the year in the rural parts of the counties or census divisions of Canada, 1931—Con.

Number on Map	County or Census Division	Rural Population		Average Number Months at School in Year
		Total	At School (all ages)	
	Ontario—Con.			
52	Welland	30,197	6,741	7·86
53	Wellington	26,193	4,774	7·67
54	Wentworth	27,648	6,192	7·80
55	York	180,263	38,163	7·83
56	District of Patricia	3,973	204	3·72
	Manitoba—			
	Division No. 1	22,817	5,099	7·63
	Division No. 2	33,646	7,708	7·57
	Division No. 3	24,576	5,207	7·66
	Division No. 4	15,054	2,931	7·70
	Division No. 5	38,898	9,024	7·75
	Division No. 6	37,088	8,431	7·76
	Division No. 7	18,582	3,958	7·69
	Division No. 8	14,855	3,162	7·65
	Division No. 9	38,889	9,314	7·85
	Division No. 10	15,387	3,580	7·61
	Division No. 11	23,782	5,506	7·70
	Division No. 12	23,631	5,788	7·44
	Division No. 13	18,977	4,618	7·66
	Division No. 14	22,309	5,196	7·53
	Division No. 15	9,040	1,995	7·40
	Division No. 16	26,639	4,070	7·66
	Saskatchewan—			
	Division No. 1	31,096	6,828	7·69
	Division No. 2	31,661	7,608	7·55
	Division No. 3	37,936	9,502	7·44
	Division No. 4	22,178	5,024	7·14
	Division No. 5	38,418	8,875	7·62
	Division No. 6	44,358	10,714	7·70
	Division No. 7	35,441	8,688	7·62
	Division No. 8	36,705	9,022	7·60
	Division No. 9	47,454	11,518	7·36
	Division No. 10	35,530	8,813	7·50
	Division No. 11	34,101	8,340	7·69
	Division No. 12	30,974	7,094	7·69
	Division No. 13	33,237	8,006	7·66
	Division No. 14	40,409	8,136	7·35
	Division No. 15	63,643	13,912	7·45
	Division No. 16	37,966	7,994	7·26
	Division No. 17	23,534	4,624	7·47
	Division No. 18	6,339	502	7·17
	Alberta—			
	Division No. 1	15,909	3,575	7·61
	Division No. 2	29,383	6,442	7·89
	Division No. 3	11,804	2,640	7·63
	Division No. 4	21,666	4,493	7·88
	Division No. 5	23,065	5,637	7·73
	Division No. 6	46,436	9,827	7·85
	Division No. 7	30,556	7,553	7·81
	Division No. 8	45,250	9,935	7·80
	Division No. 9	22,184	4,431	7·58
	Division No. 10	50,113	12,134	7·74
	Division No. 11	41,641	8,967	7·71
	Division No. 12	11,920	2,035	7·32
	Division No. 13	23,368	4,936	7·47
	Division No. 14	36,962	7,984	7·68
	Division No. 15	12,286	2,025	7·47
	Division No. 16	24,766	4,195	7·26
	Division No. 17	5,788	708	6·66
	British Columbia—			
	Division No. 1	16,767	3,166	7·90
	Division No. 2	19,308	3,166	7·76
	Division No. 3	28,918	5,429	7·85
	Division No. 4	99,869	19,969	7·84
	Division No. 5	65,172	11,280	7·86
	Division No. 6	21,732	3,461	7·77
	Division No. 7	12,658	1,827	7·63
	Division No. 8	16,701	2,663	7·76
	Division No. 9	11,386	1,497	7·35
	Division No. 10	7,013	1,068	7·30
	Yukon	2,870	144	7·38
	Northwest Territories	9,723	244	7·00

TABLE 36. Numerical and percentage distribution of counties according to percentages at school for Canadian-, British- and foreign-born population 7-14 years of age, Canada, 1931

P.C. at School of the Population 7-14	No. of Counties			P.C. of Total No. of Counties in Each Class			P.C. Not at School of the Population 7-14
	Canadian Born	British Born	Foreign Born	Canadian Born	British Born	Foreign Born	
TOTAL	220	197[1]	220	100·00	100·00	100·00	
100	–	26	13	–	13·20	5·91	0
98-99	1	15	3	0·45	7·61	1·36	1- 2
96-97	43	41	23	19·55	20·81	10·45	3- 4
94-95	45	39	37	20·45	19·80	16·82	5- 6
92-93	33	27	29	15·00	13·71	13·18	7- 8
90-91	24	14	23	10·91	7·11	10·45	9-10
88-89	24	8	21	10·91	4·06	9·55	11-12
86-87	25	5	14	11·36	2·54	6·36	13-14
84-85	9	8	12	4·09	4·06	5·45	15-16
82-83	8	1	11	3·64	0·51	5·00	17-18
80-81	2	2	10	0·91	1·02	4·55	19-20
78-79	–	2	4	–	1·02	1·82	21-22
76-77	1	–	3	0·45	–	1·36	23-24
74-75	1	3	2	0·45	1·52	0·91	25-26
72-73	–	–	2	–	–	0·91	27-28
70-71	–	1	3	–	0·51	1·36	29-30
68-69	1	–	1	0·45	–	0·45	31-32
66-67	–	1	1	–	0·51	0·45	33-34
64-65	–	–	1	–	–	0·45	35-36
60-61	–	–	1	–	–	0·45	39-40
56-57	1	–	2	0·45	–	0·91	43-44
50-51	–	3	1	–	1·52	0·45	49-50
42-43	–	1	1	–	0·51	0·45	57-58
32-33	1	–	1	0·45	–	0·45	67-68
Under 20	1	–	1	0·45	–	0·45	Over 80
Mean P.C. at School	90·9	93·0	88·7				
Standard Deviation	8·53	8·50	10·97				

[1]There were 23 counties with no British-born population 7-14 years of age.

TABLE 37. Percentages at school of the population 7-14 years of age, density of population per square mile, percentages of total population urban, rural non-farm and British races, Canada, by counties or census divisions, 1931

Number on Map	County or Census Division	P.C. at School of the Population 7-14	Density of Population per Square Mile	P.C. of Total Population		
				Urban (incorporated)	Rural Non-Farm	British Races
	Prince Edward Island—					
1	Kings	93	30	14	10	92
2	Prince	93	40	17	19	72
3	Queens	94	49	33	12	90
	Nova Scotia—					
1	Annapolis	95	13	17	27	84
2	Antigonish	91	19	18	5	75
3	Capo Breton	95	95	75	14	83
4	Colchester	96	17	35	18	91
6	Cumberland	95	22	49	17	85
6	Digby	94	19	8	37	42
7	Guysborough	86	10	17	35	74
8	Halifax	95	49	68	19	80
9	Hants	95	16	19	24	87
10	Inverness	93	15	22	6	75
11	Kings	94	29	23	24	87
12	Lunenburg	92	27	22	26	36
13	Pictou	95	35	60	10	89
14	Queens	85	11	25	34	66
15	Richmond	88	23	-	40	39
16	Shelburne	93	13	27	45	88
17	Victoria	88	7	-	21	97
18	Yarmouth	93	25	40	20	65
	New Brunswick—					
1	Albert	94	11	-	33	88
2	Carleton	96	16	20	21	96
3	Charlotte	95	17	35	32	96
4	Gloucester	83	22	8	19	16
5	Kent	85	13	-	21	21
6	Kings	94	14	14	23	94
7	Madawaska	82	19	26	29	7
8	Northumberland	90	7	22	24	72
9	Queens	92	8	-	35	91
10	Restigouche	85	9	35	30	35
11	St. John	96	100	77	19	88
12	Sunbury	93	6	-	47	83
13	Victoria	92	7	10	36	60
14	Westmorland	94	40	44	21	56
15	York	95	9	38	20	92
	Quebec—					
1	Abitibi	82	-	18	35	3
2	Argenteuil	90	24	30	34	40
3	Arthabaska	90	41	38	6	1
4	Bagot	89	49	29	5	1
5	Beauce	86	40	26	10	1
6	Beauharnois	88	171	76	6	10
7	Bellechasse	89	34	6	27	-
8	Bertbier	91	11	22	24	1
9	Bonaventure	87	9	-	24	23
10	Brome	86	25	29	8	63
11	Chambly	93	194	65	21	35
12	Champlain	90	7	51	19	30
13	Charlevoix	82	10	33	20	2
14	Chateauguay	91	60	27	12	24
15	Chicoutimi	88	3	67	9	4
16	Compton	91	23	35	9	31
17	Deux-Montagnes	90	51	18	22	2
18	Dorchester	86	33	4	21	4
19	Drummond	92	49	43	14	8
20	Frontenac	85	19	21	16	3
21	Gaspé	83	10	8	17	20
23	Hull	88	26	60	16	19
24	Huntingdon	87	34	16	19	44
25	Iberville	88	47	37	8	4
26	Joliette	87	11	43	15	2
27	Kamouraska	88	23	9	32	-
28	Labelle	82	8	27	16	1
29	Lac-St-Jean	87	2	39	11	2
30	Laprairie	91	79	26	32	5
31	L'Assomption	85	62	35	15	3
33	Lévis	90	131	64	16	3
34	L'Islot	86	25	4	35	1
35	Lotbinière	89	32	27	7	2
36	Maskinongé	87	7	19	24	1
37	Matane	84	13	39	12	2
38	Mégantic	88	46	52	6	7
39	Missisquoi	89	52	49	8	29
40	Montcalm	89	4	22	15	5
41	Moatmagny	86	32	19	33	1

TABLE 37. Percentages at school of the population 7-14 years of age, density of population per square mile, percentages of total population urban, rural non-farm and British races, Canada, by counties or census divisions, 1931—Con.

Number on Map	County or Census Division	P.C. at School of the Population 7-14	Density of Population per Square Mile	P.C. of Total Population		
				Urban (incorporated)	Rural Non-Farm	British Races
	Quebec—Con.					
42	Montmorency	88	8	18	38	2
43	Montreal Island	93	4,994	99	1	26
44	Jesus Island	92	174	37	31	5
45	Napierville	86	51	27	6	2
46	Nicolet	91	46	24	8	1
47	Papineau	83	19	41	10	14
48	Pontiac	81	2	22	19	53
49	Portneuf	89	25	38	15	3
50	Quebec	89	62	88	6	7
51	Richelieu	88	97	62	7	1
52	Richmond	88	46	53	6	21
53	Rimouski	87	16	33	21	2
54	Rouville	90	57	37	8	4
55	Saguenay	69	–	5	80	11
56	Shefford	86	50	54	4	13
57	Sherbrooke	90	157	83	5	26
58	Soulanges	91	67	35	16	5
59	Stanstead	90	58	61	5	33
60	St-Hyacinthe	90	93	65	5	1
61	St-Jean	92	86	68	6	10
62	St-Maurice	92	38	77	8	4
63	Témiscouata	88	28	28	19	1
64	Temiskaming	86	2	44	18	12
65	Terrebonne	89	49	53	13	5
66	Vaudreuil	87	60	45	13	12
67	Verchères	87	63	36	10	3
68	Wolfe	87	25	28	30	5
69	Yamaska	90	46	24	12	–
	Ontario—					
1	Addington	90	8	7	26	81
2	Algoma	95	2	61	19	57
3	Brant	97	127	64	13	81
4	Bruce	93	26	39	6	73
5	Carleton	97	180	79	10	64
6	Cochrane	90	1	44	38	34
7	Dufferin	97	27	29	8	96
8	Dundas	95	42	27	12	68
9	Durham	96	41	39	13	95
10	Elgin	98	60	49	11	88
11	Essex	97	226	75	9	58
12	Frontenac	94	29	57	14	86
13	Glengarry	93	39	18	21	49
14	Grenville	96	35	39	13	90
15	Grey	96	34	42	6	84
16	Haldimand	97	44	35	11	75
17	Halihurton	95	4	–	37	89
18	Halton	96	73	49	17	90
19	Hastings	95	25	47	15	83
20	Huron	96	35	30	12	85
21	Kenora	92	1	53	32	49
22	Kent	95	68	45	14	71
23	Lambton	96	49	50	10	87
24	Lanark	96	29	56	8	93
25	Leeds	95	39	43	18	90
26	Lennox	96	40	32	13	82
27	Lincoln	97	163	62	13	77
28	Manitoulin	92	7	17	30	73
29	Middlesex	96	95	66	11	90
30	Muskoka	96	13	39	26	85
31	Nipissing	91	5	56	17	40
32	Norfolk	95	49	32	15	76
33	Northumberland	96	43	38	12	92
34	Ontario	96	70	55	15	87
35	Oxford	96	63	46	11	86
36	Parry Sound	94	6	29	29	72
37	Peel	97	60	30	28	93
38	Perth	95	61	53	5	71
39	Peterborough	96	31	58	15	92
40	Prescott	91	50	31	17	20
41	Prince Edward	94	43	31	12	92
42	Rainy River	92	2	40	23	51
43	Renfrew	93	17	41	14	54
44	Russell	92	45	17	21	20
45	Simcoe	93	50	48	14	85
46	Stormont	92	79	35	33	47
47	Sudbury	93	3	44	36	32
48	Thunder Bay	96	1	71	16	49
49	Timiskaming	94	6	31	46	59
50	Victoria	96	19	40	14	96
51	Waterloo	96	174	74	8	40

TABLE 37. Percentages at school of the population 7-14 years of age, density of population per square mile, percentages of total population urban, rural non-farm and British races, Canada, by counties or census divisions, 1931—Con.

Number on Map	County or Census Division	P.C. at School of the Population 7-14	Density of Population per Square Mile	P.C. of Total Population		
				Urban (incorporated)	Rural Non-Farm	British Races
	Ontario—Con.					
52	Welland	97	214	64	23	60
53	Wellington	97	57	55	9	84
54	Wentworth	98	415	85	7	80
55	York	97	972	79	18	83
56	District of Patricia	17	–	–	97	9
	Manitoba—					
	Division No. 1	88	5	–	21	7
	Division No. 2	92	17	13	16	20
	Division No. 3	95	10	8	23	66
	Division No. 4	93	7	18	13	80
	Division No. 5	93	9	16	37	33
	Division No. 6	98	117	87	6	59
	Division No. 7	97	14	50	12	78
	Division No. 8	97	9	25	16	81
	Division No. 9	97	37	14	57	70
	Division No. 10	93	8	14	19	62
	Division No. 11	94	10	15	18	69
	Division No. 12	92	8	3	17	14
	Division No. 13	92	7	22	11	35
	Division No. 14	91	7	14	10	43
	Division No. 15	93	4	10	22	61
	Division No. 16	76	–	13	64	25
	Saskatchewan—					
	Division No. 1	97	7	25	8	61
	Division No. 2	96	6	26	6	49
	Division No. 3	94	6	19	7	44
	Division No. 4	96	4	21	5	46
	Division No. 5	95	9	29	5	45
	Division No. 6	97	16	60	5	58
	Division No. 7	97	8	44	4	61
	Division No. 8	97	5	26	6	47
	Division No. 9	95	12	22	6	20
	Division No. 10	94	9	15	7	35
	Division No. 11	97	15	61	3	61
	Division No. 12	96	7	24	7	63
	Division No. 13	96	6	22	7	56
	Division No. 14	89	3	13	13	50
	Division No. 15	93	10	24	9	27
	Division No. 16	91	5	22	10	38
	Division No. 17	87	4	14	15	53
	Division No. 18	32	–	–	85	8
	Alberta—					
	Division No. 1	98	4	45	8	51
	Division No. 2	97	9	49	13	55
	Division No. 3	97	2	22	11	44
	Division No. 4	97	5	25	12	66
	Division No. 5	97	3	13	12	58
	Division No. 6	97	13	67	10	69
	Division No. 7	97	6	20	6	56
	Division No. 8	96	9	26	8	54
	Division No. 9	94	2	9	26	57
	Division No. 10	97	9	14	6	33
	Division No. 11	97	27	67	3	58
	Division No. 12	91	1	14	35	50
	Division No. 13	85	3	6	15	21
	Division No. 14	91	5	6	10	34
	Division No. 15	82	1	10	26	32
	Division No. 16	85	3	11	14	48
	Division No. 17	58	–	–	79	21
	British Columbia—					
	Division No. 1	97	1	26	61	60
	Division No. 2	92	3	52	21	57
	Division No. 3	94	4	29	31	66
	Division No. 4	97	39	74	17	75
	Division No. 5	95	9	46	42	77
	Division No. 6	88	1	28	36	60
	Division No. 7	91	1	–	92	52
	Division No. 8	85	–	22	42	51
	Division No. 9	90	–	39	58	43
	Division No. 10	78	–	–	50	57

TABLE 38. Own children 7-14 years of age not at school, by nativity and literacy of parent, Canada and provinces, 1931

Nativity of Parent and Province	Number of Own Children 7-14 Not at School in Families with					
	Two Parents Living Together			One Head Only		
	Total	With Literate Parents	With Illiterate Parents	Total	With Literate Parent	With Illiterate Parent
CANADA	**86,793**	**67,158**	**19,635**	**9,416**	**7,600**	**1,816**
Prince Edward Island	671	631	40	108	102	6
Nova Scotia	3,990	3,182	808	602	511	91
New Brunswick	5,520	3,243	2,277	590	428	162
Quebec	41,501	33,272	8,229	4,255	3,629	626
Ontario	14,070	11,786	2,284	1,589	1,361	228
Manitoba	5,245	3,704	1,541	584	415	169
Saskatchewan	7,227	5,368	1,859	665	490	175
Alberta	5,463	4,201	1,262	564	403	161
British Columbia	3,106	1,771	1,335	459	261	198
Canadian born	**68,013**	**51,602**	**16,411**	**7,603**	**6,028**	**1,575**
Prince Edward Island	652	612	40	104	98	6
Nova Scotia	3,556	2,839	717	547	464	83
New Brunswick	5,170	3,007	2,163	562	404	158
Quebec	38,631	30,824	7,807	3,937	3,356	581
Ontario	10,777	8,836	1,941	1,238	1,039	199
Manitoba	2,515	1,788	727	326	222	104
Saskatchewan	2,963	1,828	1,135	304	175	129
Alberta	2,091	1,259	832	289	155	134
British Columbia	1,658	609	1,049	296	115	181
British born	**5,419**	**5,272**	**147**	**604**	**599**	**5**
Prince Edward Island	10	10	-	1	1	-
Nova Scotia	312	243	69	37	34	3
New Brunswick	154	150	4	10	10	-
Quebec	863	842	21	124	123	1
Ontario	1,684	1,662	22	195	194	1
Manitoba	462	459	3	46	46	-
Saskatchewan	692	679	13	67	67	-
Alberta	611	605	6	50	50	-
British Columbia	631	622	9	74	74	-
Foreign born	**13,361**	**10,284**	**3,077**	**1,209**	**973**	**230**
Prince Edward Island	9	9	-	3	3	-
Nova Scotia	122	100	22	18	13	5
New Brunswick	196	86	110	18	14	4
Quebec	2,007	1,606	401	194	150	44
Ontario	1,609	1,288	321	156	128	28
Manitoba	2,268	1,457	811	212	138	74
Saskatchewan	3,572	2,861	711	294	248	46
Alberta	2,761	2,337	424	225	198	27
British Columbia	817	540	277	89	72	17

TABLE 39. Percentages of own children 7-14 years of age not at school, by nativity and literacy of parent, Canada and provinces, 1931

Nativity of Parent and Province	Percentage of Own Children 7-14 Not at School in Families with					
	Two Parents Living Together			One Head Only		
	Total (1)	With Literate Parents (2)	With Illiterate Parents (3)	Total (4)	With Literate Parent (5)	With Illiterate Parent (6)
CANADA	**5·63**	**4·75**	**15·65**	**6·45**	**5·61**	**19·95**
Prince Edward Island	5·27	5·10	11·24	6·91	6·44	22·22
Nova Scotia	5·21	4·47	14·84	6·55	5·88	18·46
New Brunswick	8·23	5·76	21·25	9·25	7·50	24·07
Quebec	8·95	7·95	18·23	11·20	10·25	24·04
Ontario	3·09	2·72	9·86	3·48	3·09	13·36
Manitoba	4·81	3·84	12·28	5·68	4·49	16·34
Saskatchewan	4·54	3·71	12·82	4·85	3·90	15·22
Alberta	4·79	3·97	15·36	5·12	3·94	20·43
British Columbia	3·77	2·30	24·69	4·56	2·76	31·58
Canadian born	**6·85**	**5·66**	**20·51**	**7·93**	**6·68**	**27·50**
Prince Edward Island	5·28	5·09	11·56	6·80	6·52	22·22
Nova Scotia	5·42	4·64	16·27	6·88	6·13	21·45
New Brunswick	8·40	5·85	21·17	9·50	7·68	24·05
Quebec	9·38	8·31	18·92	11·66	10·68	24·78
Ontario	3·66	3·16	13·62	4·03	3·50	19·34
Manitoba	6·45	4·88	31·11	7·83	5·70	39·39
Saskatchewan	5·77	3·76	41·62	6·29	3·85	44·48
Alberta	6·82	4·38	43·88	8·45	4·97	44·52
British Columbia	6·42	2·62	41·04	8·11	3·57	42·29
British born	**2·16**	**2·11**	**9·41**	**2·47**	**2·46**	**4·76**
Prince Edward Islnnd	4·76	4·78	–	6·67	6·67	–
Nova Scotia	3·99	3·35	12·19	4·37	4·25	6·38
New Brunswick	4·99	4·94	8·16	4·07	4·08	–
Quebec	4·11	4·04	14·89	6·36	6·35	7·69
Ontario	1·62	1·61	4·98	1·95	1·94	4·17
Manitoba	1·80	1·80	4·16	1·95	1·95	–
Saskatchewan	2·48	2·45	11·30	2·72	2·72	–
Alberta	2·37	2·36	6·25	2·05	2·05	–
British Columbia	1·76	1·74	11·25	1·81	1·81	–
Foreign born	**4·50**	**4·07**	**7·00**	**4·73**	**4·36**	**7·22**
Prince Edward Island	5·81	6·16	–	15·00	15·00	–
Nova Scotia	3·83	3·68	4·69	4·69	4·00	8·47
New Brunswick	8·31	4·50	24·50	8·14	6·80	26·67
Quebec	6·54	5·95	10·77	8·53	7·40	17·89
Ontario	2·78	2·61	3·79	3·13	2·96	4·28
Manitoba	5·11	4·26	8·00	4·50	3·51	9·41
Saskatchewan	4·47	4·19	6·10	4·58	4·45	5·38
Albertn	4·80	4·55	6·81	4·37	4·24	5·58
British Columbin	3·93	3·00	10·00	3·80	3·35	8·85

TABLE 40. Number and percentage of own children 7-14 years of age not at school, by marital status of head of family and number of children, Canada, 1931

Marital Status of Head and Number of Children in Family	Own Children 7-14 Not at School		Marital Status of Head and Number of Children in Family	Own Children 7-14 Not at School	
	No.	P.C.		No.	P.C.
CANADA	**96,209**	**5·71**	**Widowed**	**6,853**	**6·70**
1 child	4,437	4·75	1 child	546	6·21
2- 3 children	20,636	4·31	2- 3 children	1,942	5·80
4- 6 "	38,521	5·58	4- 6 "	2,873	6·90
7- 9 "	24,847	7·42	7- 9 "	1,225	7·90
10-12 "	7,040	8·78	10-12 "	253	9·01
13-18 "	728	8·32	13-18 "	14	6·48
Married (parents living together)	**86,793**	**5·63**	**Divorced**	**70**	**4·06**
1 child	3,534	4·50	1 child	13	3·08
2- 3 children	17,793	4·16	2- 3 children	31	3·55
4- 6 "	34,734	5·48	4- 6 "	18	4·85
7- 9 "	23,309	7·39	7- 9 "	8	14·81
10-12 "	6,711	8·74	10-12 "	-	-
13-18 "	712	8·40	13-18 "	-	-
Married, one absent	**2,474**	**5·92**	**Single**	**19**	**15·08**
1 child	332	5·87	1 child	12	17·14
2- 3 children	864	5·21	2- 3 children	6	16·22
4- 6 "	895	6·07	4- 6 "	1	7·69
7- 9 "	305	7·34	7- 9 "	-	-
10-12 "	76	13·04	10-12 "	-	-
13-18 "	2	3·51	13-18 "	-	-

TABLE 41. Number and percentage of own children 7-14 years of age not at school, by literacy and marital status of head of family, Canada and provinces, 1931

Marital Status of Head and Province	Own Children 7-14								
	Total			Not at School					
				Number			Percentage		
	Total	With Literate Parents	With Illiterate Parents[1]	Total	With Literate Parents	With Illiterate Parents[1]	Total	With Literate Parents	With Illiterate Parents[1]
ALL CLASSES	**1,686,358**	**1,551,764**	**134,594**	**96,209**	**74,758**	**21,451**	**5·71**	**4·82**	**15·94**
Prince Edward Island	14,288	13,905	383	779	733	46	5·45	5·27	12·01
Nova Scotia	85,815	79,879	5,936	4,592	3,693	899	5·35	4·62	15·14
New Brunswick	73,413	62,024	11,389	6,110	3,671	2,439	8·32	5·92	21·42
Quebec	501,677	453,941	47,736	45,756	36,901	8,855	9·12	8·13	18·55
Ontario	501,528	476,651	24,877	15,659	13,147	2,512	3·12	2·76	10·10
Manitoba	119,251	105,670	13,581	5,829	4,119	1,710	4·89	3·90	12·59
Saskatchewan	172,860	157,204	15,656	7,892	5,858	2,034	4·57	3·73	12·99
Alberta	124,964	115,961	9,003	6,027	4,604	1,423	4·82	3·97	15·81
British Columbia	92,562	86,529	6,033	3,565	2,032	1,533	3·85	2·35	25·41
Two parents living together	**1,540,451**	**1,414,960**	**125,491**	**86,793**	**67,158**	**19,635**	**5·63**	**4·75**	**15·65**
Prince Edward Island	12,724	12,368	356	671	631	40	5·27	5·10	11·24
Nova Scotia	76,631	71,188	5,443	3,990	3,182	808	5·21	4·47	14·84
New Brunswick	67,032	56,316	10,716	5,520	3,243	2,277	8·23	5·76	21·25
Quebec	463,682	418,550	45,132	41,501	33,272	8,229	8·95	7·95	18·23
Ontario	455,832	432,662	23,170	14,070	11,786	2,284	3·09	2·72	9·86
Manitoba	108,966	96,419	12,547	5,245	3,704	1,541	4·81	3·84	12·28
Saskatchewan	159,142	144,636	14,506	7,227	5,368	1,859	4·54	3·71	12·82
Alberta	113,956	105,741	8,215	5,463	4,201	1,262	4·79	3·97	15·36
British Columbia	82,486	77,080	5,406	3,106	1,771	1,335	3·77	2·30	24·69

[1]One or both parents illiterate.

TABLE 41. Number and percentage of own children 7-14 years of age not at school, by literacy and marital status of head of family, Canada and provinces, 1931—Con.

Marital Status of Head and Province	Own Children 7-14								
	Total			Not at School					
				Number			Percentage		
	Total	With Literate Parents	With Illiterate Parents[1]	Total	With Literate Parents	With Illiterate Parents[1]	Total	With Literate Parents	With Illiterate Parents[1]
One parent only	**145,907**	**136,804**	**9,103**	**9,416**	**7,600**	**1,816**	**6·45**	**5·61**	**19·95**
Prince Edward Island	1,564	1,537	27	108	102	6	6·91	6·44	22·22
Nova Scotia	9,184	8,691	493	602	511	91	6·55	5·88	18·46
New Brunswick	6,381	5,708	673	590	428	162	9·25	7·50	24·07
Quebec	37,995	35,391	2,604	4,255	3,629	626	11·20	10·25	24·04
Ontario	45,696	43,989	1,707	1,589	1,361	228	3·48	3·09	13·36
Manitoba	10,285	9,251	1,034	584	415	169	5·68	4·49	16·34
Saskatchewan	13,718	12,568	1,150	665	490	175	4·85	3·90	15·22
Alberta	11,008	10,220	788	564	403	161	5·12	3·94	20·43
British Columbia	10,076	9,449	627	459	261	198	4·56	2·76	31·58
Married, one absent	**41,761**	**39,692**	**2,069**	**2,474**	**2,095**	**379**	**5·92**	**5·28**	**18·32**
Prince Edward Island	549	538	11	28	26	2	5·10	4·83	18·18
Nova Scotia	2,932	2,787	145	245	207	38	8·36	7·43	26·21
New Brunswick	1,627	1,514	113	129	110	19	7·93	7·27	16·81
Quebec	6,996	6,591	405	793	695	98	11·34	10·54	24·20
Ontario	14,195	13,764	431	500	453	47	3·52	3·29	10·90
Manitoba	3,285	3,007	278	185	139	46	5·63	4·62	16·55
Saskatchewan	4,457	4,145	312	232	183	49	5·21	4·41	15·71
Alberta	3,877	3,645	232	206	155	51	5·31	4·25	21·98
British Columbia	3,843	3,701	142	156	127	29	4·06	3·43	20·42
Widowed	**102,295**	**95,340**	**6,955**	**6,853**	**5,429**	**1,424**	**6·70**	**5·69**	**20·47**
Prince Edward Island	1,009	993	16	80	76	4	7·93	7·65	25·00
Nova Scotia	6,174	5,826	348	350	297	53	5·67	5·10	15·23
New Brunswick	4,683	4,124	559	457	315	142	9·76	7·64	25·40
Quebec	30,824	28,632	2,192	3,443	2,918	525	11·17	10·19	23·95
Ontario	31,028	29,766	1,262	1,074	896	178	3·46	3·01	14·10
Manitoba	6,826	6,093	733	396	274	122	5·80	4·50	16·64
Saskatchewan	9,037	8,209	828	426	300	126	4·71	3·65	15·22
Alberta	6,871	6,324	547	343	234	109	4·99	3·70	19·93
British Columbia	5,843	5,373	470	284	119	165	4·86	2·21	35·11
Divorced	**1,725**	**1,667**	**58**	**70**	**63**	**7**	**4·06**	**3·78**	**12·07**
Prince Edward Island	6	6	–	–	–	–	–	–	–
Nova Scotia	69	69	–	6	6	–	8·70	8·70	–
New Brunswick	61	60	1	1	–	1	1·64	–	100·00
Quebec	165	160	5	17	15	2	10·30	9·38	40·00
Ontario	425	418	7	8	8	–	1·88	1·91	–
Manitoba	168	146	22	3	2	1	1·79	1·37	4·55
Saskatchewan	206	198	8	5	5	–	2·43	2·53	–
Alberta	247	242	5	12	12	–	4·86	4·96	–
British Columbia	378	368	10	18	15	3	4·76	4·08	30·00
Single	**126**	**105**	**21**	**19**	**13**	**6**	**15·08**	**12·38**	**2·86**
Prince Edward Island	–	–	–	–	–	–	–	–	–
Nova Scotia	9	9	–	1	1	–	11·11	11·11	–
New Brunswick	10	10	–	3	3	–	30·00	30·00	–
Quebec	10	8	2	2	1	1	20·00	12·50	50·00
Ontario	48	41	7	7	4	3	14·58	9·76	42·86
Manitoba	6	5	1	–	–	–	–	–	–
Saskatchewan	18	16	2	2	2	–	11·11	12·50	–
Alberta	13	9	4	3	2	1	23·08	22·22	25·00
British Columbia	12	7	5	1	–	1	8·33	–	20·00

[1]One or both parents illiterate.

TABLE 42. Number and percentage of own children 7-14 years of age not at school, in families with wage-earner heads, husband and wife living together, by occupation group, Canada and provinces, 1931

Occupation Group	Own Children 7-14 Years of Wage-Earner Heads of Normal[1] Families											
	Canada			Prince Edward Island			Nova Scotia			New Brunswick		
	Total	Not at School		Total	Not at School		Total	Not at School		Total	Not at School	
		No.	P.C.		No.	P.C.		No.	P.C.		No.	P.C.
ALL OCCUPATIONS	807,039	35,075	4·35	3,278	224	6·83	46,820	2,232	4·77	33,306	2,274	6·83
Farm labourers	29,296	2,462	8·40	422	38	9·00	1,483	128	8·63	1,436	151	1·05
Other agriculture	1,604	72	4·49	36	3	8·33	65	–	–	83	1	1·20
Fishing, hunting, etc.	4,853	719	14·82	194	18	9·28	1,603	158	9·86	699	86	14·36
Logging	12,336	1,714	13·89	–	–	–	748	76	10·16	1,248	269	21·65
Mining and quarrying	24,951	1,137	4·56	–	–	–	9,589	420	4·38	538	54	10·04
Manufacturing	143,470	4,459	3·11	275	14	5·09	5,261	148	2·81	4,152	153	3·68
Building and construction	90,310	3,631	4·02	295	16	5·42	4,433	159	3·59	3,061	155	6·06
Electric light and power	20,028	667	3·33	48	2	4·17	1,376	54	3·92	631	22	3·49
Railway transportation	67,462	1,586	2·76	317	14	4·42	3,910	59	3·92	3,237	111	3·43
Water transportation	10,456	483	4·62	141	7	4·96	2,179	98	5·50	439	15	3·42
Road transportation	31,631	1,299	4·11	111	6	5·41	1,252	53	4·23	1,064	46	4·32
Other transportation	13,665	348	2·55	88	7	7·95	775	21	2·71	639	11	2·04
Warehousing and storage	11,034	238	2·16	38	1	2·63	474	12	2·53	264	5	1·89
Commercial	60,831	1,417	2·33	270	11	4·07	1,849	43	2·33	1,548	39	2·52
Finance, insurance	13,853	197	1·42	37	–	–	389	6	1·64	309	6	1·94
Public administration and defence	18,163	462	2·54	63	6	9·52	879	22	2·50	584	9	1·54
Professional service	30,677	612	1·99	114	4	3·51	1,146	24	2·09	810	13	1·60
Recreational service	1,439	38	2·64	1	1	100·00	36	4	11·11	34	1	2·94
Personal service	27,157	967	3·56	67	4	5·97	1,335	54	4·04	1,025	48	4·68
Laundering, cleaning, etc.	2,361	87	3·68	6	1	16·67	45	1	2·22	55	1	1·82
Clerical	30,221	672	2·22	103	5	4·85	929	18	1·94	835	11	1·32
Unskilled labourers	170,779	11,786	6·90	644	66	10·25	8,048	672	8·35	10,802	1,067	9·88
Unspecified	462	22	4·76	8	–	–	16	2	12·50	13	–	–
In non-wage-earner families	733,412	51,718	7·05	9,446	447	4·73	29,811	1,758	5·90	33,726	3,246	9·62
In rural other than agricultural wage-earner families	758,875	59,283	7·81	9,674	501	6·18	41,217	2,764	6·71	47,412	4,772	10·06

Occupation Group	Quebec			Ontario			Manitoba			Saskatchewan		
ALL OCCUPATIONS	257,968	19,155	7·43	284,421	6,328	2·22	50,515	1,294	2·56	38,944	1,159	2·98
Farm labourers	5,118	644	12·58	10,392	518	4·98	2,509	255	10·16	4,008	376	9·38
Other agriculture	329	30	9·12	447	11	2·46	130	4	3·08	171	8	4·68
Fishing, hunting, etc.	288	95	32·99	759	76	10·01	222	107	4·82	87	18	20·69
Logging	6,699	1,078	16·34	1,840	179	9·73	149	6	4·03	79	4	5·06
Mining and quarrying	3,162	288	9·11	4,823	198	4·11	296	9	3·04	238	3	1·26
Manufacturing	47,188	2,835	6·01	65,695	990	1·51	6,873	98	1·43	2,980	33	1·11
Building and construction	36,758	2,501	6·80	29,215	502	1·72	4,989	82	1·64	2,941	53	1·80
Electric light and power	6,068	363	7·16	8,180	162	1·86	1,164	13	1·12	732	10	1·37
Railway transportation	14,152	727	6·14	19,493	344	1·76	5,277	85	1·61	4,823	92	1·91
Water transportation	3,451	230	6·66	1,947	51	2·62	95	3	3·16	64	9	14·06
Road transportation	10,296	774	7·52	12,291	294	2·39	2,195	29	1·32	1,193	17	1·42
Other transportation	3,128	144	4·60	5,215	102	1·96	983	12	1·22	1,123	32	2·85
Warehousing and storage	2,287	124	5·42	4,870	66	1·16	1,009	14	1·39	710	5	0·70
Commercial	17,162	735	4·28	20,342	318	1·66	4,738	55	1·16	6,146	103	1·68
Finance, insurance	4,437	104	2·34	4,872	50	1·03	984	6	0·61	991	8	0·81
Public administration and defence	5,874	260	4·43	5,835	86	1·47	1,266	18	1·42	1,009	15	1·49
Professional service	8,407	289	3·44	11,476	155	1·35	2,277	30	1·32	1,816	30	1·65
Recreational service	291	17	5·84	643	9	1·40	100	–	–	100	1	1·00
Personal service	8,364	568	6·79	9,256	162	1·75	2,035	39	1·92	1,329	22	1·66
Laundering, cleaning, etc.	966	63	6·52	995	13	1·31	104	4	3·85	44	1	2·27
Clerical	10,071	418	4·15	10,624	149	1·40	2,303	19	0·83	1,453	13	0·89
Unskilled labourers	64,413	6,855	10·64	55,031	1,906	3·46	10,774	406	3·77	6,890	306	4·44
Unspecified	159	13	8·18	180	7	3·89	37	–	–	18	–	–
In non-wage-earner families	205,714	22,346	10·86	171,411	7,742	4·52	58,451	3,951	6·76	120,198	6,068	5·05
In rural other than agricultural wage-earner families	193,410	24,408	12·62	183,637	9,203	5·01	64,137	4,428	6·90	110,944	6,200	5·59

[1] *i.e.*, with husband and wife living together.

TABLE 42. Number and percentage of own children 7-14 years of age not at school, in families with wage-earner heads, husband and wife living together, by occupation group, Canada and provinces, 1931—Con.

Occupation Group	Own Children 7-14 Years of Wage-Earner Heads of Normal[1] Families					
	Alberta			British Columbia		
	Total	Not at School		Total	Not at School	
		No.	P.C.		No.	P.C.
ALL OCCUPATIONS	**37,345**	**930**	**2·49**	**54,442**	**1,479**	**2·72**
Farm labourers	2,272	196	8·63	1,656	156	9·42
Other agriculture	181	9	4·97	162	6	3·70
Fishing, hunting, etc	38	16	42·11	1,063	145	13·64
Logging	96	8	8·33	1,577	94	5·96
Mining and quarrying	3,670	119	3·24	2,635	46	1·75
Manufacturing	3,758	69	1·84	7,288	119	1·63
Building and construction	2,957	55	1·86	5,661	108	1·91
Electric light and power	964	14	1·45	1,865	37	1·98
Railway transportation	3,896	73	1·87	3,357	81	2·41
Water transportation	48	–	–	2,092	70	3·35
Road transportation	1,218	38	3·12	2,011	42	2·09
Other transportation	853	12	1·41	961	7	0·73
Warehousing and storage	601	9	1·50	781	12	1·54
Commercial	4,576	55	1·20	4,201	58	1·38
Finance, insurance	816	6	0·74	1,018	11	1·08
Public administration and defence	1,072	13	1·21	1,581	33	2·09
Professional service	1,856	35	1·89	2,775	32	1·15
Recreational service	98	1	1·02	130	4	3·08
Personal service	1,493	25	1·67	2,253	45	2·00
Laundering, cleaning, etc	54	–	–	92	3	3·26
Clerical	1,611	13	0·81	2,292	26	1·13
Unskilled labourers	5,202	164	3·15	8,975	344	3·83
Unspecified	15	–	–	16	–	–
In non-wage-earner families	76,611	4,533	5·92	28,044	1,627	5·80
In rural other than agricultural wage-earner families	72,457	4,669	6·44	35,987	2,338	6·50

TABLE 43. Number of illiterate husbands and wives in families with wage-earner heads, husband and wife living together, by occupation group, Canada and provinces, 1931

No.	Occupation Group	Husbands and Wives in Normal[1] Families with Wage-Earner Heads							
		Canada		Prince Edward Island		Nova Scotia		New Brunswick	
		Total	Illiterate	Total	Illiterate	Total	Illiterate	Total	Illiterate
1	**ALL OCCUPATIONS**	**2,067,720**	**65,467**	**7,578**	**214**	**99,334**	**3,817**	**70,176**	**4,550**
2	Farm labourers	82,434	5,720	946	58	3,594	190	3,394	373
3	Other agriculture	3,956	38	96	1	160	–	158	–
4	Fishing, hunting, etc	9,758	1,839	272	15	2,822	304	1,008	174
5	Logging	24,630	3,216	–	–	1,480	115	2,218	527
6	Mining and quarrying	51,856	2,892	–	–	16,556	914	970	64
7	Manufacturing	378,350	5,760	638	5	11,130	186	8,574	226
8	Electric light and power	46,144	726	108	3	2,450	67	1,228	33
9	Building and construction	210,218	4,314	728	16	9,172	204	5,904	270
10	Railway transportation	121,336	1,948	576	2	5,144	55	5,380	106
11	Water transportation	25,952	549	250	1	4,736	130	1,062	24
12	Road transportation	86,238	1,637	236	1	2,956	62	2,380	76
13	Other transportation	37,136	124	232	3	1,922	11	1,388	5
14	Warehousing and storage	32,898	127	94	1	1,050	2	706	5
15	Commercial	187,832	395	732	–	5,256	4	4,576	15
16	Finance, insurance	40,606	29	130	–	1,188	2	852	2
17	Public administrntion and defence	46,630	90	134	–	2,198	6	1,360	5
18	Professional service	101,386	107	364	–	3,354	1	2,418	4
19	Recreational service	4,888	49	14	–	136	2	110	2
20	Personal service	84,016	1,668	192	4	3,344	80	2,280	77
21	Laundering, cleaning, etc	6,694	252	8	–	102	1	118	2
22	Clerical	102,224	114	274	–	2,682	3	2,492	7
23	Unskilled labourers	381,310	33,860	1,540	104	17,862	1,478	21,562	2,553
24	Unspecified	1,234	13	14	–	40	–	38	–
25	In non-wnge-earner families	1,646,484	94,247	22,274	434	76,642	3,498	67,662	6,687
26	In rural other than agricultural wage-earner families	1,560,942	102,166	22,010	479	92,760	4,736	88,826	9,715

[1] *i.e.*, with husband and wife living together.

TABLE 44. Number of own children 7-14 years of age in families with wage-earner heads, husband and wife living together, with number and percentage not at school, number of husbands and wives and number and percentage illiterate, by occupation group, Canada, 1931

Occupation Group	Own Children 7-14			Husbands and Wives		
	Total	Not at School		Total	Illiterate	
		No.	P.C.		No.	P.C.
ALL OCCUPATIONS	**807,039**	**35,075**	**4·35**	**2,067,726**	**65,467**	**3·17**
Farm labourers	29,296	2,462	8·40	82,434	5,720	6·94
Other agriculture	1,604	72	4·49	3,956	38	0·96
Fishing, hunting, etc	4,853	719	14·82	9,758	1,839	18·85
Logging	12,336	1,714	13·89	24,630	3,216	13·06
Mining and quarrying	24,951	1,137	4·56	51,856	2,892	5·58
Manufacturing	143,470	4,459	3·11	378,350	5,760	1·52
Electric light and power production	20,028	667	3·33	46,144	726	1·57
Building and construction	90,310	3,631	4·02	210,218	4,314	2·05
Railway transportation	57,462	1,586	2·76	121,336	1,948	1·61
Water transportation	10,456	483	4·62	25,952	549	2·12
Road transportation	31,631	1,299	4·11	86,238	1,637	1·00
Other transportation	13,665	348	2·55	37,136	124	0·33
Warehousing and storage	11,034	238	2·16	32,898	127	0·39
Commercinl	60,831	1,417	2·33	187,832	395	0·21
Finnnce, insurance	13,853	197	1·42	40,606	29	0·07
Public administration and defence	18,163	462	2·54	46,630	90	0·19
Professional service	30,677	612	1·99	101,386	107	0·11
Recreational service	1,439	38	2·64	4,888	49	1·00
Personal service	27,157	967	3·56	84,016	1,668	1·99
Laundering, cleaning, etc	2,361	87	3·68	6,694	252	3·76
Clerical	30,221	672	2·22	102,224	114	0·11
Unskilled labourers	170,779	11,786	6·90	381,310	33,860	8·88
Unspecified	462	22	4·76	1,234	13	1·05
In non-wage-earner families	733,412	51,718	7·05	1,646,484	94,247	5·72
In rural other than agricultural wage-earner families	758,875	59,283	7·81	1,560,942	102,166	6·55

X = p.c. children 7-14 years of age not at school.

Y = p.c. husbands and wives illiterate.

$\sigma_X = 3·30$ R = 0·95

$\sigma_Y = 4·48$ Y = 1·26X − 2·58

TABLE 43. Number of illiterate husbands and wives in families with wage-earner heads, husband and wife living together, by occupation group, Canada and provinces, 1931

Husbands and Wives in Normal[1] Families with Wage-Earner Heads												No.
Quebec		Ontario		Manitoba		Saskatchewan		Alberta		British Columbia		
Total	Illiterate	Total	Illiterate	Total	Illiterate	Total	Illiterate	Total	Illiterate	Total	Illiterate	
558,574	**26,000**	**833,108**	**17,327**	**130,960**	**4,370**	**94,494**	**2,727**	**102,258**	**2,101**	**171,244**	**4,355**	1
12,568	1,282	31,372	1,335	6,638	558	11,310	758	7,390	513	5,222	653	2
580	6	1,194	3	318	1	536	3	448	3	466	21	3
524	82	1,676	201	458	183	172	71	128	18	2,698	791	4
11,210	1,689	4,120	558	298	46	154	5	242	7	4,908	269	5
5,764	516	12,050	772	828	32	540	74	8,416	319	6,732	201	6
103,178	2,328	193,606	2,386	18,536	276	7,798	68	10,850	71	24,040	214	7
9,424	310	20,916	222	2,484	27	1,588	12	2,292	8	5,654	35	8
70,436	2,273	80,202	986	12,310	207	6,410	104	7,676	85	17,380	169	9
24,222	398	45,728	566	11,652	265	9,918	205	9,372	126	9,344	225	10
7,248	261	5,534	47	256	8	116	9	106	-	6,644	69	11
25,934	864	36,784	388	5,306	95	2,828	52	3,472	62	6,342	37	12
7,140	50	15,786	42	2,632	7	2,676	2	2,402	2	2,958	2	13
5,718	54	15,946	40	2,942	11	1,723	5	1,894	4	2,820	5	14
44,794	153	74,722	105	14,234	28	15,160	45	13,162	23	15,196	22	15
10,200	10	16,988	6	3,014	2	2,442	4	2,326	1	3,466	2	16
11,674	48	18,034	19	3,514	1	2,498	3	2,768	3	4,450	5	17
23,950	34	42,788	31	7,398	10	5,674	8	5,934	6	9,506	13	18
988	14	2,162	19	380	1	286	3	330	3	482	5	19
22,710	787	32,544	462	6,354	69	3,620	52	4,672	42	8,300	95	20
2,572	137	2,944	109	308	2	114	-	186	1	342	-	21
30,330	45	39,556	28	7,970	9	4,804	5	5,538	2	8,578	15	22
127,130	14,645	137,840	9,000	23,032	2,536	14,082	1,237	12,596	800	25,666	1,507	23
280	5	616	2	98	2	40	2	58	2	50	-	24
373,482	20,996	513,168	13,455	119,472	10,799	222,084	14,846	160,556	8,686	91,144	5,846	25
306,214	30,173	477,012	14,436	124,318	11,271	197,364	14,798	147,332	8,725	105,106	7,833	26

TABLE 45. Median years spent at school, by quinquennial age groups and sex, rural and urban, Prairie Provinces, 1936

Age Group	Median Years at School in											
	Manitoba		Saskatchewan		Alberta		Manitoba		Saskatchewan		Alberta	
	Male	Female	Male	Female	Male	Female	Rural	Urban	Rural	Urban	Rural	Urban
ALL AGES	**6·787**	**7·016**	**6·484**	**6·545**	**6·857**	**7·017**	**6·139**	**8·097**	**6·089**	**7·778**	**6·296**	**8·308**
0- 4	-	-	-	-	-	-	-	-	-	-	-	-
5- 9	1·337	1·338	1·098	1·128	0·979	1·000	1·196	1·574	0·980	1·451	0·804	1·343
10-14	6·043	6·130	5·945	6·025	6·005	6·056	5·890	6·366	5·825	0·349	5·826	6·378
15-19	8·747	9·079	8·293	8·698	8·872	9·249	7·935	0·931	7·913	9·920	8·245	10·080
20-24	8·722	0·390	8·232	8·931	8·816	9·755	7·937	10·236	7·918	10·484	8·321	10·682
25-29	8·291	8·961	7·827	8·342	8·353	9·132	7·680	9·708	7·488	9·881	7·858	10·064
30-34	7·855	8·449	7·363	7·771	7·820	8·423	7·425	9·108	7·012	9·087	7·380	0·465
35-39	7·765	8·283	7·282	7·684	7·671	8·373	7·303	8·987	6·918	8·879	7·278	9·310
40-44	7·736	8·274	7·380	7·876	7·813	8·670	7·262	8·951	7·026	9·014	7·398	9·458
45-49	7·773	8·254	7·521	7·905	7·950	8·719	7·210	8·995	7·133	8·988	7·475	9·449
50-54	7·759	8·122	7·505	7·766	7·980	8·485	7·130	8·867	7·117	8·850	7·445	9·340
55-59	7·458	7·007	7·412	7·597	7·801	8·302	6·854	8·582	7·045	8·627	7·318	9·121
60-64	7·318	7·549	7·186	7·338	7·611	8·090	6·638	8·387	6·844	8·208	7·164	8·873
65-69	6·938	7·199	6·843	6·972	7·311	7·693	6·305	8·022	6·495	7·730	6·862	8·392
70-74	6·740	7·040	6·596	6·676	7·122	7·333	6·063	7·861	6·151	7·432	6·579	8·055
75-79	6·547	6·944	6·324	6·617	6·809	7·269	5·914	7·604	5·960	7·124	6·445	7·658
80-84	6·376	6·550	6·231	6·498	6·590	7·134	5·727	7·278	5·708	7·140	6·235	7·482
85-89	6·336	6·452	5·443	5·873	6·540	7·025	5·569	7·396	4·696	6·742	5·946	7·610

TABLE 46. Percentages[1] at school for specified number of years, rural and urban, Prairie Provinces, 1936

Age Group	Percentages at School									
	0 Years		Under 5 Years		5-8 Years		9-12 Years		13 Years and over	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
MANITOBA										
0- 4	99·99	99·98	0·01	0·02	–	–	–	–	–	–
5- 9	34·38	27·19	65·27	72·45	0·34	0·36	–	–	–	–
10-14	1·91	0·39	34·07	24·70	63·04	72·92	0·98	1·98	–	–
15-19	1·56	0·35	4·88	1·01	59·37	27·78	33·57	68·51	0·62	2·34
20-24	2·18	0·46	6·98	1·89	55·62	29·14	32·02	58·51	3·20	10·00
25-29	3·19	1·07	10·88	5·37	53·64	33·84	29·02	51·18	3·28	8·54
30-34	4·52	1·67	14·37	8·81	51·33	38·12	26·61	43·37	3·18	8·04
35-39	6·73	2·78	15·31	8·92	48·59	38·42	26·55	42·23	2·83	7·65
40-44	8·01	4·32	15·57	9·58	46·71	36·54	26·50	41·68	3·20	7·88
45-49	9·39	5·65	14·71	9·06	46·86	35·33	25·98	42·68	3·05	7·28
50-54	10·10	5·39	14·45	8·56	47·80	37·29	24·53	41·25	3·12	7·50
55-59	13·03	6·78	14·76	8·58	47·90	38·68	21·65	38·41	2·65	7·55
60-64	15·11	7·06	15·98	8·86	46·18	40·24	20·20	36·04	2·54	7·80
65-69	19·09	8·76	16·45	10·09	44·33	41·24	17·60	33·58	2·53	6·33
70-74	21·71	9·04	16·83	11·69	43·14	40·92	16·25	32·04	2·08	6·31
75-79	23·52	9·98	16·70	11·17	42·78	44·32	14·84	28·88	2·15	5·65
80-84	25·09	11·24	17·14	13·85	42·73	43·75	13·54	26·86	1·49	4·31
85-89	25·93	9·13	18·01	15·15	42·59	42·95	11·28	28·42	2·19	4·36
90-94	33·90	15·09	15·82	9·43	42·37	50·94	6·21	16·04	1·69	8·49
95-99	37·78	18·18	31·11	22·73	24·44	45·45	4·44	9·09	2·22	4·55
100 and over	87·50	71·43	–	–	12·50	14·29	–	14·29	–	–
SASKATCHEWAN										
0- 4	99·99	100·00	0·01	–	–	–	–	–	–	–
5- 9	37·89	29·73	61·80	69·87	0·31	0·40	–	–	–	–
10-14	1·44	0·42	35·81	25·52	61·77	71·35	0·97	2·71	–	–
15-19	1·10	0·47	3·21	0·71	62·74	29·97	32·47	65·44	0·48	3·41
20-24	1·37	0·59	4·40	1·72	60·64	29·08	30·45	54·87	3·14	13·74
25-29	2·52	1·23	10·02	4·61	60·23	34·20	24·43	49·78	2·80	10·18
30-34	4·85	2·11	17·05	8·37	55·86	38·63	20·02	41·06	2·21	9·83
35-39	6·53	2·86	17·83	8·44	53·48	39·91	20·29	39·83	1·87	8·96
40-44	7·10	3·22	16·34	7·78	52·42	38·83	21·91	40·88	2·22	9·29
45-49	7·49	3·15	14·07	6·88	53·34	40·09	22·73	40·87	2·37	9·01
50-54	7·53	3·22	13·16	6·33	55·38	42·03	21·49	39·64	2·43	8·78
55-59	8·92	3·46	12·96	7·48	55·03	43·07	20·63	36·84	2·47	9·15
60-64	11·49	4·59	13·97	9·01	53·23	45·39	18·85	32·83	2·45	8·18
65-69	16·13	6·95	15·15	10·60	50·10	47·54	16·28	28·37	2·34	6·54
70-74	20·27	7·54	16·26	13·35	46·81	47·88	14·53	25·80	2·13	5·43
75-79	21·71	8·80	17·50	15·44	44·97	48·52	13·72	22·97	2·10	4·27
80-84	25·42	10·70	16·76	13·58	44·22	48·07	11·81	23·87	1·79	3·79
85-89	29·92	9·50	21·37	20·25	38·93	46·50	8·85	19·25	0·92	4·50
90-94	41·38	17·50	20·11	22·50	31·03	40·00	5·75	16·25	1·72	3·75
95-99	60·00	22·22	17·14	16·67	11·42	38·89	11·42	11·11	–	11·11
100 and over	81·25	–	12·50	–	–	–	6·25	–	–	–
ALBERTA										
0- 4	99·99	100·00	0·01	–	–	–	–	–	–	–
5- 9	40·47	31·76	59·25	67·88	0·28	0·35	–	–	–	–
10-14	1·90	0·31	35·42	24·85	61·46	72·11	1·22	2·73	–	–
15-19	1·30	0·24	3·02	0·59	56·30	25·77	38·79	69·94	0·58	3·47
20-24	1·82	0·34	4·14	1·26	53·05	24·88	36·75	58·78	4·25	14·73
25-29	3·07	0·63	8·80	3·70	53·36	30·67	30·91	54·40	3·86	10·60
30-34	4·35	1·12	14·00	6·48	53·19	36·44	25·22	46·40	3·24	9·56
35-39	5·63	1·48	14·24	6·86	52·92	37·55	24·44	44·79	2·77	9·33
40-44	6·18	2·00	13·20	6·29	51·06	35·67	26·50	46·02	3·06	10·02
45-49	6·27	1·85	12·04	5·74	51·21	36·33	27·04	46·19	3·44	9·88
50-54	6·85	2·05	11·35	5·07	52·02	38·63	26·25	44·24	3·52	10·02
55-59	8·27	2·13	11·75	5·50	51·74	40·98	24·30	41·62	3·94	9·77
60-64	10·21	2·00	12·36	6·62	50·70	41·82	23·35	38·80	3·39	9·87
65-69	14·11	3·39	13·38	7·37	48·37	46·28	20·82	35·09	3·32	7·88
70-74	17·40	4·29	13·95	9·91	47·25	46·87	18·72	32·32	2·69	6·60
75-79	18·72	5·90	14·51	11·71	46·42	48·75	17·63	28·41	2·72	5·23
80-84	19·53	6·66	15·71	13·93	47·80	47·40	14·96	26·12	2·00	5·88
85-89	23·77	6·72	15·44	13·44	45·59	45·74	13·48	28·17	1·72	5·94
90-94	36·92	3·61	12·31	15·66	32·31	53·01	18·46	26·51	–	1·20
95-99	67·86	–	7·14	18·18	17·86	54·55	7·14	27·27	–	–
100 and over	62·50	–	–	75·00	25·00	25·00	12·50	–	–	–

[1]Percentages based on stated ages and years at school.

TABLE 47. Years spent at school of the total population, by quinquennial age groups and sex, averaged in quartiles, Prairie Provinces, 1936

Age Group	Quartile Years at School in								
	Manitoba			Saskatchewan			Alberta		
	1	2	3	1	2	3	1	2	3
MALES									
ALL AGES	2·928	6·787	9·320	2·508	6·484	8·768	3·104	6·857	9·328
0- 4	-	-	-	-	-	-	-	-	-
5- 0	-	1·337	3·182	-	1·098	3·062	-	0·979	3·001
10-14	3·754	6·043	7·560	3·528	5·945	7·513	3·647	6·005	7·550
15-10	6·686	8·747	10·292	6·525	8·293	9·809	6·808	8·872	10·254
20-24	6·602	8·722	10·779	6·452	8·232	10·292	6·721	8·816	10·768
25-20	6·242	8·291	10·376	6·064	7·827	9·859	6·344	8·353	10·346
30-34	5·846	7·855	9·986	5·529	7·363	9·335	5·860	7·820	9·902
35-39	5·668	7·765	9·042	5·342	7·282	9·337	5·716	7·671	9·749
40-44	5·521	7·736	9·964	5·390	7·380	9·533	5·757	7·813	9·985
45-49	5·483	7·773	9·992	5·554	7·521	9·671	5·875	7·950	10·127
50-54	5·474	7·759	10·084	5·601	7·505	9·634	5·897	7·980	10·207
55-59	5·226	7·458	9·853	5·496	7·412	9·545	5·764	7·801	10·107
60-64	5·053	7·318	9·739	5·260	7·186	9·201	5·572	7·611	9·953
65-69	3·828	6·938	9·275	4·372	6·843	8·843	5·265	7·311	9·584
70-74	3·113	6·740	9·118	3·319	6·596	8·645	5·057	7·122	9·328
75-79	2·573	6·547	8·805	2·476	6·324	8·505	4·108	6·809	8·846
80-84	2·001	6·376	8·699	1·820	6·231	8·401	3·313	6·590	8·682
85-89	1·875	6·336	8·689	0·514	5·443	7·900	2·879	6·540	8·640
FEMALES									
ALL AGES	2·819	7·016	9·799	2·003	6·545	9·167	2·306	7·017	9·870
0- 4	-	-	-	-	-	-	-	-	-
5- 9	-	1·338	3·182	-	1·128	3·077	-	1·000	3·013
10-14	4·008	6·130	8·608	3·708	6·025	7·562	3·767	6·056	7·586
15-19	6·877	9·079	10·494	6·714	8·698	10·274	7·098	9·249	10·583
20-24	6·946	9·390	11·193	6·754	8·931	11·044	7·308	9·755	11·691
25-29	6·424	8·961	10·916	6·199	8·342	10·674	6·580	9·132	11·057
30-34	5·958	8·449	10·648	5·559	7·771	10·240	5·995	8·423	10·652
35-39	5·767	8·283	10·486	5·504	7·684	10·098	5·973	8·373	10·536
40-44	5·659	8·274	10·478	5·632	7·876	10·210	6·151	8·670	10·667
45-49	5·626	8·254	10·401	5·713	7·905	10·188	6·224	8·719	10·724
50-54	5·665	8·122	10·329	5·696	7·766	10·060	6·184	8·485	10·583
55-59	5·473	7·907	10·229	5·574	7·597	9·896	6·040	8·302	10·521
60-64	5·183	7·549	10·024	5·283	7·338	9·586	5·815	8·090	10·366
65-69	3·991	7·199	9·698	4·410	6·972	9·087	5·494	7·693	10·068
70-74	3·285	7·040	9·615	2·750	6·676	8·894	5·123	7·333	9·808
75-79	3·146	6·944	9·422	2·699	6·617	8·739	5·061	7·269	9·677
80-84	2·105	6·550	8·856	2·059	6·498	8·691	5·023	7·134	9·451
85-89	2·088	6·452	8·776	0·876	5·873	8·200	3·852	7·025	9·631

TABLE 48. Percentages of urban population at school for specified number of years, localities of 10,000 and over, Prairie Provinces, 1936

Age Group	Percentages at School in Urban Localities of 10,000 and over														
	0 Years			Under 5 Years			5-8 Years			9-12 Years			13 Years and over		
	Man.	Sask.	Alta.	Man.	Sask.	Alta.	Man.	Sask.	Alta.	Man.	Sask.	Alta.	Man.	Sask.	Alta.
0- 4	99·98	99·97	99·99	0·02	0·03	0·01	-	-	-	-	-	-	-	-	-
5- 9	26·61	28·72	31·86	73·05	70·77	67·69	0·33	0·51	0·45	-	-	-	-	-	-
10-14	0·26	0·16	0·27	24·68	23·22	23·55	72·92	72·83	73·17	2·14	3·79	3·00	-	-	-
15-19	0·11	0·19	0·15	0·88	0·62	0·48	26·33	26·62	24·10	70·04	67·54	71·09	2·64	5·04	4·18
20-24	0·28	0·22	0·25	1·73	1·44	1·05	28·56	27·31	24·21	58·88	54·59	58·79	10·54	16·44	15·71
25-29	0·89	1·06	0·45	5·23	3·77	3·38	33·48	32·33	29·83	51·62	52·15	55·90	8·78	10·69	10·44
30-34	1·49	2·00	0·83	8·64	6·43	5·63	37·98	37·16	35·49	43·60	43·95	48·58	8·29	10·47	9·47
35-39	2·58	2·87	1·28	8·46	6·61	5·90	38·26	37·13	36·52	42·82	43·19	46·66	7·87	10·20	9·65
40-44	4·07	2·93	1·68	9·12	5·64	5·48	36·29	35·73	34·49	42·43	45·07	48·17	8·09	10·63	10·18
45-49	5·38	2·77	1·56	8·58	4·97	4·97	34·73	36·65	34·84	43·81	44·94	48·30	7·50	10·67	10·34
50-54	5·27	3·00	1·82	7·96	4·79	4·41	36·63	38·51	37·94	42·33	43·25	45·34	7·81	10·45	10·49
55-59	6·47	3·33	1·87	8·29	5·35	4·53	37·64	40·99	40·15	39·54	39·80	43·28	8·06	10·54	10·18
60-64	6·66	4·39	2·60	8·52	6·27	5·14	39·41	42·49	41·07	37·11	36·54	40·89	8·29	10·31	10·30
65-69	8·54	5·29	2·98	9·62	7·05	6·90	39·62	45·35	45·26	35·40	34·78	36·61	6·82	7·53	8·24
70-74	8·96	5·93	3·15	11·08	9·01	8·88	39·61	46·60	46·81	33·47	31·59	33·35	6·87	6·86	7·82
75-79	8·95	6·62	4·87	10·34	11·27	9·95	43·63	45·53	48·62	30·78	30·08	30·91	6·31	6·50	5·65
80-84	10·57	9·64	5·78	13·14	10·91	12·44	43·43	48·48	47·56	27·31	26·65	28·44	5·54	4·31	5·78
85-89	8·73	8·62	8·05	11·83	16·38	9·32	45·63	47·41	48·31	29·58	22·41	30·51	4·23	5·17	3·81
90-94	13·04	14·29	4·84	8·70	14·29	12·90	47·83	38·10	53·23	20·29	23·81	27·42	10·14	9·52	1·61
95-99	8·33	-	-	41·67	-	16·67	41·67	60·00	66·67	8·33	-	16·67	-	40·00	-
100 and over	66·67	-	-	-	-	66·67	16·67	-	33·33	16·67	-	-	-	-	-

THE AGE DISTRIBUTION OF THE CANADIAN PEOPLE

by

M. C. MacLean

SUMMARY

THE EVOLUTION OF CANADA'S AGE DISTRIBUTION

From the material in Chapter I and especially the Appendix, the conclusion arrived at is that during the first part of the period of observation, *i.e.*, up to the beginning of the present century, Canada's age distribution developed fairly steadily in a manner which may be described mathematically. The population moved on from 1881 to 1901 according to an ageing process capable of graphical description, the "picture" in the earlier years showing large proportions at the younger ages and small proportions at the older ages, the peak at the earlier ages gradually flattening as the years went on and the proportions at later and later ages increasing. This steady process was rudely interrupted at the beginning of the present century, synchronizing with and undoubtedly due to the large immigration wave which superimposed upon the original population a new population largely at the early adult ages and centering in the middle twenties. The result has been a composite age structure consisting of a large "middle-age" population moving up in the process but at the same time causing what might be called a rejuvenation by means of another superimposed population at the early ages, *viz.*, the children of these immigrants.

The social significance of this middle-age population seems to be considerable. In the first place, it has been generated by population mobility. It shows properties different from those of the ordinary population and it is difficult to decide whether these properties are due to the fact that it is a mobile population or due to the age composition. However, the facts of Chapter III would seem to justify the conclusion that both causes are operative. There, evidence is given that it has a death rate lower than might be expected from the age composition, although the age itself of this population is subject to low death rates. Indirectly, we see the same phenomenon in the monograph *Canadian Life Tables, 1931.*

Another feature of this superimposed middle-age population is that it contains a preponderance of males and of persons at working ages. The influence of age here is buttressed by the fact that the population moved largely for the sake of working so that it is apt to contain almost as large a proportion of workers as the age distribution warrants. Further, the fact that it is a moving population carries with it the implication that these workers contain a large element of wage-earners as distinguished from owners and independent workers who need a more or less stationery or stable form of life. This helps to explain why the proportion of wage-earners to other workers increased very rapidly up to the time of the great depression.

Another feature of the superimposed population is that it tends to lead to a sudden increase in the old population instead of that gradual increase to be expected from the ageing process of an ordinary population. This is apt to lead to social complications during a definite period in the future until the effect of the immigration wave has passed on, *viz.*, an abnormal proportion of persons over the age of seventy. If the mobile population is *per se* less liable to death than the static, the proportions thus expected at the older ages will be larger than expected from calculations made on ordinary death rates.

Still another feature of the middle-age population with a preponderance of single males at the earlier part of the wave is the probable effect upon expenditure and assumption of obligations at the time. The fact that a large wage-earning population without dependents was suddenly converted into a population with dependents but with no greater earning powers can reasonably be expected to be reflected in certain economic situations that have risen during the more recent years of the century.

CLASSIFICATION OF AREAS BY AGE TYPES

Chapter II classifies types of age structures of the population and shows that there are emigration as well as immigration and static types. The emigration type is particularly characterized by scarcity of persons in the early adult ages, this scarcity moving on in the same way as the superabundance in the case of the immigration type. This means that these emigration

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types are short of the usual working ages so that the work is done by the old and the young. In the other respects mentioned in the case of the immigration types, the emigration type is apt to behave in the opposite direction.

CLASSIFICATION OF AREAS BY FUNCTIONAL ASPECTS OF AGE DISTRIBUTION

Chapter III classifies areas by three main functional aspects of age distribution, *viz.*, percentage born in province of residence, age of settlement and death rates of residents. This classification corroborates that of Chapter II. When the functional aspects are correlated separately with the threefold index of the previous chapter, migration—immigration and emigration—is again shown to be the main cause of our age distribution, overshadowing the fundamental influence of births and deaths.

CLASSIFICATION OF URBAN LOCALITIES BY PECULIARITIES IN AGE STRUCTURE

Chapter IV shows how another type of migration affects age distribution, *viz.*, the movement into cities. A very interesting and perhaps important feature of this movement is the constant rejuvenation of the population of these cities. What is most important in this chapter, however, is that it shows, in so far as can be shown indirectly, the ages or near ages of movement into cities, whereas in Chapter III is shown the ages of movement of immigrants into the country as a whole. The city movement is undoubtedly younger and more feminine. The implications of this differentiation are, no doubt, important.

PART I

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INTRODUCTION

Age, after sex, is probably the most fundamental attribute of a population. It permeates almost all the other attributes. The rates of birth, death, marriage, earnings; the differential rates of these attributes among races, birthplaces and geographical areas, etc.; the movement of population; a good many of the financial and social problems of population, such as dependency, illiteracy, crime and institutional care; the inter-comparison of the component parts of the population in other respects than those mentioned; all are either impracticable or incapable of interpretation without making due allowance for age.

At the same time, age distribution is one of the most imperfectly understood attributes. Probably one reason for this is its familiarity; we are prone to think that there is nothing in it that *needs* analysis or clear understanding. Yet few have a definite idea as to what constitutes old age or middle age, an "old" country as distinguished from a "new" country. Few, in fact, have definite knowledge about any particular age or age group that was not true also of another age.

While age has been subjected to different forms of analysis for specific purposes, little has as yet been written on the subject in its general aspect, *i.e.*, on "age distribution" as a concrete whole and in ascertaining and depicting its definite shape as such. It follows that just as little has been done towards tracing its development through different stages as a concrete whole. Historical accounts of age are found but only of its history in spots or vaguely. We hear of a country or people "ageing" but what precisely does this mean? Does a population "age" in the same sense as an individual? From analogy to another question "Does the increase in life expectations mean longevity?" we have reasons to think that this is not necessarily so. It may merely mean that fewer persons die young, not that many persons live to old age.

An attempt to analyse age as a concrete whole is beset with many difficulties, chiefly through want of standards or precedent. Both the methods and the point of attack have to be discovered. However, even in this attempt it is possible to proceed safely so long as the methods are built on recognized principles but each step needs to be clearly defended.

The first step taken here is an attempt to define a general shape or concept for age distribution. Another step is the finding of a point of departure for analysis of the occurrence and of different varieties of its shape. This point may be called a basis of classification of age distribution. The subject is thus treated somewhat in the same manner as a botanical classification of plants as to family, genera, the species, etc., and the varieties and secondary material on evolution, ecology and pathology. The Appendix attempts, more or less technically, to develop the method of classification, illustrate and defend it. Chapter I sets out the principles underlying the development. The succeeding chapters of the study will consist of different forms of classification and examination of the attributes of population with which the different classes are associated and treatment of certain "pathological" phenomena, such as age mis-statements and other statistical errors to which data on age distribution are liable.

General Considerations on Age Distribution.—In connection with the Census of 1931 was compiled a wealth of material on ages in Canada unequalled in any previous census of Canada and probably not surpassed elsewhere. In addition, we have an unbroken series of uniform data on ages as far back as 1881 while, with the aid of smoothing and interpolation, data for 1861 and 1871 can be rendered uniform with this series within a small margin of error. The age distribution throughout the series is presented in quinquennial age groups. Since we know that age is fundamental to most of the attributes of population enumerated in the census, it is highly important that an attempt be made to analyse and present, in a form intelligible to the average thinker, the substance of this wealth of material.

If an age distribution were a single number or were measurable in such a way that the quantitative aspect of it could be expressed succinctly, it would be a simple matter to list age distributions geographically and under different attributes so that the mind could immediately grasp important differences. It is the object of this study to present it in such a form but the attainment of this object is exceedingly difficult. Even a quinquennial age distribution has twenty-one different groups and when twenty-one figures of one kind are presented along with twenty-one figures of another kind, it is difficult or impossible for the mind to take in the comparison even when the numbers are shown as percentages and thus referred to a common base.

It would seem that the best means of attaining the objective of this study is to present age distribution pictorially. The mind can readily distinguish between a photograph of, say, two different species, although in doing so it does not enumerate the points of difference. Further, it can grasp the distinction between different kinds within the same species; through familiarity its does not have to stop to analyse when the object is seen. If it were possible thus to familiarize the mind with a "picture" of age distribution, different kinds of such distribution could be made distinguishable at a glance.

This is laying great emphasis upon the *shape* of age distribution. Even if age distribution has not a *universal* shape (as will be more fully developed later) distinguishing it from something that it not an age distribution, it nevertheless has a *general* shape distinguishing one kind of age distribution from another. The nearest approach to a *universal* shape is brought about by the fact that in any real population every one of the five-year age groups from 0–4 to (at least) over 80 is represented and that, owing primarily to deaths, but also to other causes, the largest groups are in the earlier ages, the groups progressively and more or less gradually decreasing until they disappear around the age of 100. This shape, however, does not distinguish age distribution from millions of natural objects—say, one side of a mountain. We can, however, generalize on a shape which distinguishes one age distribution from another in the same way as we can generalize on what gives a greyhound the greyhound shape in contradistinction to what gives it an unusual shape caused by an accident. In other words, there are *steady processes* giving age distribution a general shape as distinguished from accidents which cause distortions. Two outstanding processes among these are birth and death. It is believed here that these have been expressed in the order of their importance. The changes that take place in these two processes are gradual; consequently, the *general* shape of an age distribution is comparatively smooth.

To present this in diagramic form we can imagine that each five-year interval is a closed compartment in the shape of a rectangular column filled with population. The simplest diagram is that of a life table and below is shown the population of the life table of Canada males, 1931* (Chart 1), and the population of the life table of the United States, 1870† (Chart 2), each column representing the number per ten thousand of the total.

* 1931 Census Monograph No. 13. † *Ninth Census of the United States*, Vol. II, p. xii.

Chart 1

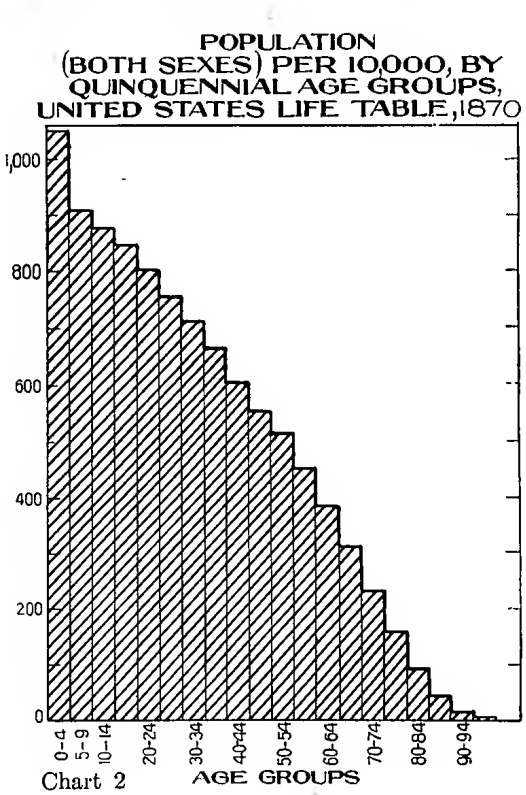


Chart 2

In Chart 1 the element of *natural increase* is eliminated and only the influence of death is shown. This is the reason for mentioning it as the simplest diagram. The peak in the first column is due merely to the fact that infant mortality is greater than that of the succeeding ages up to old age. It is not a *necessary* part of the diagram, since it also is being gradually eliminated.

Although the picture presented by a life table is thus comparatively simple, it is not so simple that it cannot have many varieties. Death is the only agent but death itself is undergoing a process of elimination.

The difference between these two charts can be expressed simply as caused by the process of elimination of death. In the earlier period represented by Chart 2, death was prominent at all ages, particularly at the younger. When it came to the later years, death was less prominent because there were fewer to die at those ages. In the later period (Chart 1) death was being postponed—very little at the earlier or middle ages and, since death is inevitable at some time, increasingly prominent at the later ages. The earlier chart is steep; the later, comparatively flat to a late age when this population may be said to vanish almost at once. We can imagine the ultimate shape of a life table if the process of death elimination continues. The columns up to very old age should be nearly equal, thus making the diagram an almost horizontal line with a sudden drop at the end. It may be longer than at present, *i.e.*, a person may live to ages beyond 100, but this is very doubtful. The more probable event is a gradual flattening up to ages around 80, then a sudden descent down to around the age of 100. The difference between the contour of the two charts may be expressed roughly as a line in the case of the life table of the United States, 1870, and an ellipse in that of Canada, 1931.

Now, as soon as we introduce actual population age distributions as distinguished from life table distributions we have added to the processes affecting the general shape that of natural increase. We have just seen that even differences in death rates can change the shape, a greater decrease from age to age due to death making the diagram steeper. It might be supposed that natural increase would have merely this effect. If a population of one hundred years ago had the same natural increase as Canada around 1931, say, thirteen per thousand, each successive five-year group (back from 100 to 0–4) would be smaller than the preceding and somewhat proportionate to the rate of natural increase. There is, however, a considerable complication caused by this natural increase.

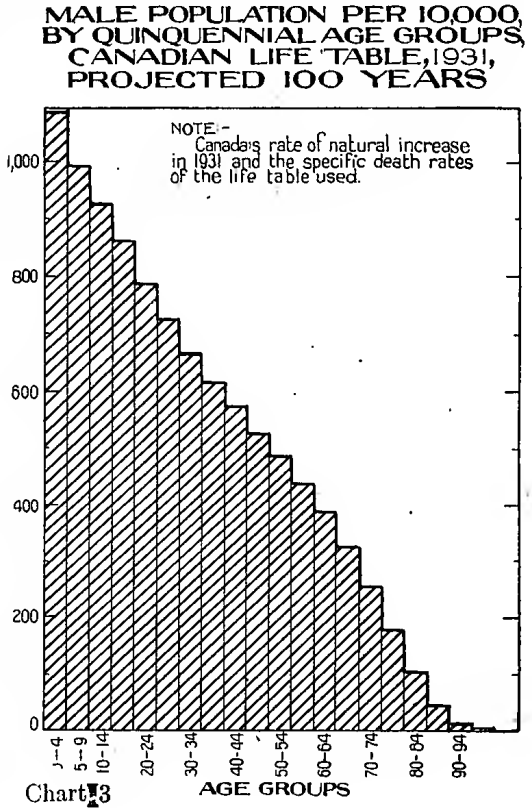


Chart 3

Chart 3 shows the resulting age distribution after one hundred years if the total population of the life table of 1931 were by some means to be given a natural increase at Canada's rate in 1931 (thirteen per thousand) and the same specific death rates (q_x) as in the life table.

It will have been noticed that the shape shown in Chart 3 was caused by two factors only, *viz.*, a steady natural increase and constant specific death rates for each age group. If either of these or both had been greater, then the curve would have been steeper; if less, flatter.

Now an actual distribution, *i.e.*, any age distribution that comes under our observation, is different from any of those shown in either of the three foregoing charts, although some are found to be closely approaching one or other of them, as will be seen later. In an actual age distribution the natural increase has *not* been steady, nor have the specific death

rates been constant. We can readily see that if its present age distribution has been built up under conditions where the natural increase and the specific death rates were changing continually, the result would cause a very complex curve; this, without introdueing the effects of immigration and emigration.

General Shape of Age Distribution.—By consulting the Appendix and especially the charts therein, it will become obvious that age distribution has a general shape—that there is such a thing as a "picture" of age distribution. This shape does not sharply distinguish age from something else, such as the side of a mountain or iceberg, but variations from the common or general type enable us to distinguish between one age distribution and another and trace the general change in shape as the population becomes more and more aged. This general shape is an inverted S-curve that varies from one extreme, when the age distribution is simply geometric (all concave) through all stages of growing convexity until it becomes entirely convex or elliptical in shape. If we take the first quarter of the moon as representing the early stage, the last quarter will represent the last stage, but the intermediate stages have no resemblance to the moon's phases. A convexity begins at the top part of the first quarter (leaving the lower part concave). This convexity creeps down from stage to stage until at last the whole shape is convex, except that we know of no actual cases where there is no concavity at the later ages. This is because a small remnant live beyond "the allotted span" and at the present may be considered as a sort of tail to the general shape; whether this tail will or will not persist depends upon whether the gradual lowering of the specific death rates will extend to the older ages or not. If our death rate were to be cut down to half the present rate, would this mean that we would have more centenarians? Probably not; at least, it does not necessarily follow.

Now, the "first quarter" shape is the stage when the number at each successive group is decreasing in geometric progression and the arithmetic difference between each successive age group is smaller than the preceding; the "last quarter" stage is when the difference between each successive age group is larger than the preceding, *i.e.*, death or whatever wears down the columns is increasing arithmetically from group to group. This means that death is being postponed to later and later ages and there is no increase in the population. The age distribution of the year 1931 is a fairly good example of an intermediate stage, *i.e.*, half concave, half convex. We might call the three chief stages (1) the geometric, (2) the linear and (3) the elliptical. Quebec, 1881, furnishes a fairly good example of the first; Canada, 1931, of the second and the Canadian life table, 1931, of the third. Throughout its known history the age distribution of Canada as a whole has been at stages between the first and second of those above mentioned but several of the counties of Canada and countries like France have passed beyond the second. We might mention such places in Canada, *e.g.*, Elgin County, Ont., and the town of Brockville; also, the provinces of Prince Edward Island and Nova Scotia.

Basis of Age Classification of Areas.—The problem with which we are faced is the classifying of the different areas and sections of the population of Canada in such a way that their age development (the general shape) is indicated. Clearly, it is not possible to do so by a succession of graphs for, even if this were done, the minute difference between each one would not strike the eye; besides, it would not furnish a quantitative measure of the stages of development. By a method developed in the Appendix (the charts of this appendix should be studied at this point) a basis of classification is proposed which seems to provide a quantitative expression for the development in the general shape of the age distribution. In the Appendix it is shown that there are certain critical points in the age distribution *i.e.*, the age groups 25–29 and 60–64. Between these ages we may consider that we have the middle and main part of our age distribution, a term which must not be confused with "middle age." The proportions before and after the 25–29 and 60–64 groups show how far the age is skewed towards either the geometric or elliptical extreme, while for the middle term there is a pivotal point which we may designate as "standard age." This pivotal point is ascertained by finding the root mean square of the age distribution from ages 25 to 64. (The reason for this is explained in the Appendix.) This standard age is used instead of mean age, median age, etc., because from trial it seems that mean age tells nothing about the shape of age distribution. The very nature of the shape of age distribution would seem to indicate that "mean" age is not a mean at all in the generally accepted meaning of the term. The mean is the centre of gravity and the word "mean" presupposes such a thing as a centre. The only thing corresponding to a conception of a centre in an age distribution is the age of zero. Every change emanates from this point.

The question may now be raised as to why it is so important that a classification be made as aforementioned. The answer is that if age is fundamental to most attributes of the population, such a classification will in a measure be a classification of such attributes. As a description of the present time, the mid-stage population should be the most vigorous population from the point of view of such attributes as low death rate, high earning capacity, etc.; the first-stage population and especially the one with mixed first- and last-stage conditions predominating should be ones where dependency is a heavy problem; the last-stage population is obviously an old one where high death rates, etc., are expected. From the point of view of history, the first-stage population is one that is not only young but has also had and still has a very large natural increase and very probably a combination of a high birth rate and a high death rate. The last-stage population is one with a past low natural increase and an increasingly low death rate. Again, the general shape is the result of steady and permanent processes; the local variations in shape depend upon transient ones. Thus, at a particular moment a population might be favourably situated with regard to earning capacity through an age distribution caused by immigration; but that very favourable situation might contain within itself the reason why in a few years the situation would be anything but favourable. A classic example was that of Saskatchewan in 1906. Its population of male adults gave it an age distribution most favourable to earning capacity but that very situation worked out a complete change in the age distribution in ten or fifteen years. These adult males married all at once and the result was an enormous proportion of dependents all at once. The adults passed beyond the favourable ages before the dependents reached them. This would not have happened to a population where the age distribution was less abnormal. As already indicated, the general shape gives the history of the age distribution which involves the history of what was steady in population increase as well as natural increase and death rates. To study the age distribution of a locality is to study the population history of that locality. The general shape, indicating the stage it has reached, throws some light upon the future. Again, it is only by knowing the general shape that we can appreciate varieties, excrescences, etc. (If we did not know the normal appearance of man we would not notice the lack of one hand in a particular individual.) Some striking examples of this may be mentioned. The Canadian population of 1911 had practically the same general shape as that of 1901 but the 1911 had an enormous hump (due to immigration) around the ages of 25 to 30. We would have expected that this hump would have dissolved into the general shape before 1931 but it did not. The hump kept travelling along, being present, though some years older, in 1921 and present, though still older, in 1931. It remains separate from the population, so that until this hump disappears in another forty years there are two populations in Canada, the one superimposed upon the other. We would not notice this—at least, we would not feel sure of it—if we did not know the general shape. Again, there was a large birth rate around 1921—probably from 1919 to 1924—and a low birth rate after 1924 with, very probably, a low birth rate from 1914 to 1918. The 1921 hump is noticeable in the Census of 1931, travelling as above mentioned. Similarly, there was a low rate of increase between 1881 and, say, 1896. The population born in that period would in 1931 be at ages 35 to 50. Later, the defect in this group was more than implemented by immigrants so that in Canada's present age distribution the effects do not appear but there is food for thought in the matter. When the immigrants came in, it was at a time when these missing ones would have been at the ages of the immigrants at the time of their arrival. The immigrants were really filling a hollow but they more than filled it—they turned it into a hump which has since progressed until it will one day reach the age groups over 70 years. If we did not know the general shape we could not record these phenomena with any confidence.

A geographical classification by general shape of age distribution can be made very useful. If we can classify counties into first, second and third degree types with some sub-classification, we contribute to the history of these counties and furnish useful information to the student and perhaps even to the physician, the economist and the statesman. Old age pensions are apt to be a matter of great concern to the third degree type; high birth rates, high death rates, institutional care, etc., in first degree types, while the second degree type would offer poor prospects for medical attendance. It is proposed, therefore, to classify the counties and census divisions of Canada into types of age distribution; the results of this classification will be seen in Chapter II.

In later chapters the classification will be correlated with other attributes of the population in an attempt to ascertain whether the expected results will turn out to be the actual. If we accept the soundness of the classification the conclusion must follow that when the actual and expected do not coincide, other agencies more potent than age are at work.

CHAPTER I

THE EVOLUTION OF CANADA'S AGE DISTRIBUTION

In the Introduction was given a description of the evolution of the general shape of our age distribution, based upon the development of the subject traced in the present chapter and particularly in the Appendix. It seems necessary to enter more into details and to trace this evolution step by step. We are fortunate in having in each census a step in the development more clearly marked out than was to be expected from actual data fitted to theory.

Already (in the Introduction) it was indicated that the general shape of age distribution passes from a stage close to the geometric, in which the number at each successive age is approximately the same fraction of the preceding age, and in which, also, the curve of the age distribution is concave, to the stage when the curve is convex and when the general shape is elliptical, resembling the last quarter of the moon. Now, the earliest census for which we can show a quinquennial age distribution for Canada is 1881; although we can give earlier years by interpolation, it is better not to use these in showing the development, as the method of interpolation presupposes what we are trying to show. However, we can find cases among the counties of Canada in 1931 where the stage of development is earlier than that of Canada as a whole in 1881. The province of Quebec in 1881 can be shown for this purpose. Although a better example could be obtained by using females instead of males, we are using males throughout this chapter for uniformity with the Introduction.

Quebec, Males, 1881.—The distribution of Quebec males, 1881, is shown in Chart III in the Appendix in comparison with the distribution of Canada as a whole at each census from 1881 to 1931. There are three points particularly noticeable in this chart of Quebec, 1881. First, the distribution is fairly smooth from the first group to the age above which all distributions are abnormal, *i.e.*, the age of 80. This reflects the history of the province. It has had a fairly steady rate of increase until recently, and not much immigration. This smoothness enables us, even in a diagram, to recognize the general shape of the distribution.

The second point is that, if we begin at the latest age groups and look backwards, the distance between the heights of the columns steadily increases. This is the characteristic of a geometric progression curve. When measured as in the Appendix, it is found to come closer to a geometric than to any other simple curve.

The third point is that, in spite of its steepness and general geometric shape, it has departed from this shape sufficiently far to convince us that we have by no means discovered the ideal case of geometric distribution. And yet it is nearer to this ideal distribution than one of its counties and one of its cities, which, according to premature conclusions by *a priori* reasoning, we were led to believe would approach more nearly this geometric shape. These two places were Chicoutimi County, 1931 and Shawinigan Falls, 1921. The basis of the conclusion in the case of Chicoutimi was that it had had a large and steady population increase since 1881 (50 years) and that at the present moment (1931) it has a very large rate of natural increase. The basis of the conclusion in the case of Shawinigan Falls was that this place had a short history and an exceedingly rapid rate of growth. Both places have very small immigrant populations. Probably the fact that these two places came far short of expectations—much shorter than Quebec, 1881—gives a hint as to why we failed in this to find ideal cases of geometric age distribution. Their shapes are seen in Chart II of the Appendix.

At first thought, a steady rate of population increase through its native population seems to be the chief condition fulfilling the requirements of the geometric shape, the secondary condition being that there be no immigration or emigration. Chicoutimi and Shawinigan Falls show that there are other considerations involved in these. There is a very strong probability that both places have suffered from emigration and that the high rate of population increase has been maintained by persons coming in from other parts of the province. Let us see how this would work out. It can be shown that, on the whole, emigrants move out at early ages, this especially if it is a city-ward movement or one out of Canada. If the persons coming in were at the same age as those moving out and they were equal in number, this emigration and immigration would make no

difference to the age distribution. However, there is reason to believe, and it can partly be demonstrated, that the incomers and outgoers are not at the same age. Those moving into rural parts from the rest of the province are not apt to be of the same age as those moving out to cities or to the United States. The incomers are a sample of the population of the whole province with a possible bias towards the mature ages; the outgoers are young people. Consequently, if we take Chicoutimi in 1931 it is more apt to be nearer Quebec in 1931 than Quebec in 1881. The county is ageing almost as fast as the province, only more irregularly. However, on account of its great rate of natural increase, it has a very steep shape. It has a first-quarter shape through the early ages but becomes convex at the later middle ages.

There is another point that applies particularly to Shawinigan Falls apart from the fact of its rapid growth with both a short history and a large influx from the rest of the province presupposed. By 1921, it had not yet had time to become a population in our age-study sense of the term. In picturing the shape of the age distribution we have taken twenty-one columns--the quinquennial groups from 0–4 to 100–104. This is our population. We do not admit the possibility of any of these columns being non-existent. However, this is only true of a place long enough settled to have persons over the age of 100—if it depends upon its own population. It is only then that it may be said to have a population and it is only after this point has been reached that the shape develops definitely. While all the twenty-one columns are in process of coming into existence the development is not the same. We are measuring all populations on the common basis—the number at each age group per ten thousand of the total population. The fact that there are none at the later middle ages at once destroys the concavity. Death has not had time to wear the shape down to smoothness. The shortness of duration admits of many more irregularities. Such an important irregularity would be caused by the moving in of parents with their children—this would make a depression at the early adult ages. Some of the links of the chain are missing and these links do not occur at random (causing only local irregularities) but are in definite places. Hence, we find a disproportion of very young persons with a disproportion of what, for that population, are old persons, *viz.*, forty and over. When the columns all come into existence, forty is a young adult age; before, it is old. Since we are classifying by shape, this distinction is important. A second very important condition, determining not only the geometric shape but the development of the shape, has thus been introduced, *viz.*, *age of settlement*.

The steadiness in the rate of population increase and the age of settlement, then, seem to be strong influences in determining the general shape, the latter being aided by death in lending it smoothness. The size of the increase causes steepness, but does not really affect the general shape. There could be several perfect geometric shapes of widely different steepnesses. The steadiness of increase is what matters. These two principles will help interpret the development of Canada's age distribution as traced in the following.

Our conception of development of age distribution should now be redefined, after which it will be possible to describe further the stage of development of Quebec, 1881 and the successive stages of Canada's development.

We might say that development of age distribution is a process of "ageing," but this really is not a good term if it is understood in the same sense as an individual ageing. A more adequate definition seems to be that the development is a process of growing convexity. The process does not begin, *i.e.*, the population does not exist as a population for the process to work on, until the country is a hundred years old with its native population or until the full span of life (twenty-one quinquennial groups) is represented with a borrowed population. If you place a ladder, say, thirty-six feet long against a wall and then slide it away until its foot is twenty-one feet from the wall, where it is made fast, the ladder in the process is still straight. Suppose now the ladder is flexible and the downward pressure is continued. It can no longer remain straight but becomes curved. The shape of the curve depends upon where and how the pressure is exerted. If properly applied, the ladder becomes convex from the wall, first, near the top. This convexity creeps down with continued pressure. The particular shape may be marked at definite stages, such as first degree, second degree and so on until we reach the *nth* degree. The difference between the ladder and age distribution is that the latter is not straight to begin with but concave, *i.e.*, when the population increases in simple geometric progression. So long as the rate of increase remains constant, and once the hundredth year is passed, the length of settlement does not seem to matter. But the rate of increase does not remain constant; it progressively slows down and

the process of slowing down is a function of the age of settlement. Consequently, this age of settlement is one of the most important forces pulling on the ladder, *i.e.*, the ageing of settlement approximates the same meaning as the ageing of the population but it would seem that a hundred years, or some equivalent, must be subtracted from it. Immigration and emigration, in course of time, come in to act as equivalents but not for some considerable time. This will be seen when tracing the development of Canada's distribution, especially subsequent to 1901.

It must not be assumed that the foregoing considerations are *a priori;* rather they are based upon the conclusion from the Appendix and the following examination of cases. However, it should be added that the above process, described up to the *nth* degree, seems to be one of growing simplicity, *i.e.*, a gradual removal of the causes that differentiate the number of persons at each age group. As increase of population is removed, the degree advances; however, even after increase disappears, the process goes on. This is seen in a comparison of the life table of Canada, 1931 and of United States, 1870 (see Charts 1 and 2, Introduction). Once increase is eliminated, death seems to be the chief or only fundamental differentiating agent but death itself is probably in process of removal, *i.e.*, of postponement until later ages. The fundamental condition, however, in our conception is that this postponement of death does not mean longevity beyond the natural span but removal of the accidental causes of death within this natural span. If this conception is true, the ultimate *nth* degree is an ellipse or even a rectangle.

Returning now to Quebec, 1881, it is clear that the province at this date fulfilled the two main conditions of concavity or first degree, *viz.*, it had had a steady and high rate of increase in native population and it had been settled sufficiently long to begin development but not long enough for advanced development. However, its shape was not exactly the simple geometric shape and the chief reason for this seems to have been emigration. Quebec was the first province in Canada to show heavy emigration. Two of its counties—Laprairie and Deux-Montagnes—have not grown since 1851; a considerable number of its counties have not grown since 1861 and others not since 1881. The emigrants were mainly to the United States. Now, it has been mentioned that emigrants as a rule move out at an early age—the late teens and early twenties—*i.e.*, it is known that they do so at the present day. It is possible that in these earlier days there was a greater tendency for whole families to move, but generally the majority of emigrants are young single people. Let us see what effect this would have upon age development. Since the natural increase kept up vigorously, the emigration would at first cause a depression at ages around twenty. The result of emigration, then, *while in process*, is an artificial tendency to convexity which is not so pronounced as the convexity caused by natural development, but nevertheless exists. Subsequent immigration would tend to neutralize this as will be described later. The slight convexity near the top of the figure indicates that natural increase, high as it was then, had begun to slow down. No doubt, if it had been possible to obtain comparable data on the age distribution in 1851, the shape would have been very nearly the first degree or simple geometric progression.

Canada, Males, 1881.—The first of the series of age distributions for Canada is that of 1881. By measurement (as shown in the Appendix) the shape of this year is further advanced than that of Quebec and this is not because it is less steep. A true developmental process distinguishes the two. It was not emigration that caused the difference because Quebec had then suffered at least as much from emigration as the rest of Canada; nor was it length of settlement. Since it is clear that it could not have been either the rate of natural increase, length of settlement or emigration, what was it? The difference itself is that there was greater convexity on the whole—it was nearer the second degree. It is, perhaps, impossible to give a definite answer to the question but the fact itself is interesting. A reasonable explanation is that the other provinces had slowed up more in natural increase from the initial stage, *e.g.*, in the early years, say, before 1851 and indeed up to 1861, Ontario's rate of natural increase seems to have been almost as great as Quebec's. The large family was the rule also in the Maritime provinces while the other provinces hardly counted in the shape of the distribution. If at the same time child mortality was greater in Quebec, all this would have a tendency to bring the upper columns of the shape nearer together as compared with the subsequent. The slowing up of natural increase alone would do this.

Canada, Males, 1891.—The next field of observation is Canada, 1891. Here we have a more advanced stage of development than 1881 but this was to be expected because of the lapse

of time. Heavy emigration had been going on in the ten years but this, if it had operated for only ten years, would cause lack of smoothness rather than development; however, it had been going on longer than that and, consequently, operated in the same manner as already described in the case of Quebec.

Canada, Males, 1901.—Canada, 1901 is probably the most interesting of all the stages of development. It is a good simple second-degree shape (see Chart III of the Appendix). Anything that is a simple regular form in nature is highly interesting because it must have been operated upon either by a constant force or by a combination of forces acting together in such a way as to produce the same results as a constant force.

In the first place, the lapse of ten years produced its natural results. But then, why the smooth results? A reasonable explanation seems to be as follows: very heavy emigration had gone on from, say, 1881 to about 1896. This was long enough to advance the development somewhat; but, manifestly, with this emigration was going on a process of slowing up of natural increase. If the census had been taken in 1896 the shape would probably have been very irregular, *i.e.*, with unnatural humps and depressions, since around 1896 the huge wave of immigration had set in, gathering force up to 1914. By 1901 this wave had been operating for only five years and had not reached nearly its maximum force. The immigrants at the time of immigration were just slightly older than the emigrants at the time of emigration—just enough older to be exactly the same age as the emigrants and thus fill the places they left vacant in the age distribution. By 1901 just enough of them had moved in to fill the gaps left by the emigrants—no more. If the census had been taken a few years later the gaps would have been more than filled in and there would have been humps. This was so in 1911. The particular date at which the census of 1901 was taken, therefore, was important in its bearing upon the smoothness of the age distribution of that date.

Canada, Males, 1911.—It is remarkable that in spite of the huge immigration the development proceeded naturally in the next ten years and in 1911 was at a further stage. It is true that its shape was more irregular but this does not seem to have affected the fundamental shape as measured (see Appendix). The slowing up of natural increase evidently proceeded as did also the age of settlement. The immigrant hump acted merely as a superimposed population upon the existing population—it was not the sliding out of the end of the ladder, but the placing of an object on it. This object had not yet become a part of the ladder.

Canada, Males, 1921.—The next step is 1921 and here the effects of immigration, also emigration (including war casualties), become manifest. It is clear that immigration and emigration are analogous to births and deaths, with this difference that in connection with age distribution births affect the shape of the age at the upper end and death, although operating all over, affects particularly the upper and lower ends, while immigration and emigration affect the middle. At the beginning immigration and emigration merely cause humps and depressions; if they continue consistently these humps and depressions spread with the assistance of death and become a part of the population, but in the long run their results are neutralized. Consequently, what seems to be of importance in determining the fundamental (as distinguished from the rough) shape of age distribution is not the magnitude of any force but the *changes* in this magnitude—the *acceleration*. What happened in the case of immigration was that it went on with tremendous force for some time and then stopped. The hump made by immigration, somewhat worn down by death, spread. What spread it still more was the fact that although immigrants came in largely in one or two age groups—20–24 and 25–29—and a yearly succession of these arrivals for, say, 20 years spread the hump by 1921 to the ages from 30 to 50 or 60, thus covering the whole middle portion and a part of the latter portion of the age shape and giving a definite trend to the shape. Meanwhile, between 1914 and 1921 emigration depressed the population in the twenties. Then another phenomenon appeared, especially in the latter part of the decade, but also throughout the decade 1911-21. The immigrants, who were mainly single adult males, almost simultaneously either married or brought in their wives. This led to what may be considered an abnormally high birth rate or, rather, a large child population out of proportion to the former trend. The shape of the population was thus abnormally developed at the extremes, leaving the early middle part depressed. The result was that although on the whole the fundamental age distribution developed somewhat in what is regarded in the foregoing description as a natural manner, yet it developed but slightly. According to the method of measurement

described in the Appendix it developed less than a third as fast as during the four previous decades or the succeeding one. As a matter of fact the age distribution shows two populations or shapes, not one—one population up to the age of 20 and another after. The question then came up as to whether this shape would round out in course of time and reassume its natural process of development.

Canada, Males, 1931.—During the decade 1921-31 the age distribution gathered up the slack with the result that 1931 showed a stage of development almost, though not quite, a direct continuation of 1901. The shape of 1931 is almost a simple third degree shape, analogous to the second degree in 1901. It is still quite irregular, but there is no mistaking the development. Now what happened between 1921 and 1931 was this: at first there was a very high birth rate for about ten years from 1916 to about 1925 or 1926, raising the numbers at ages 5–15. Next, there was heavy emigration from 1921 to about 1924 which was almost a continuation of the emigration during the War. This would have the effect of depressing still further the number in the twenties but during the latter half of the decade there was another big wave of immigration implementing the numbers previously lost by emigration. Since this immigration was largely still in the country at the Census of 1931, their results told to the utmost as in 1901. They rounded out the depression and made the age distribution more continuous from the age of 5 on. Meanwhile the natural development due to lapse of time was going on. We have thus the double shape changed once more into closer approximation to a single shape. Naturally we expect a still greater rounding out of the shape between 1931 and 1941, unless emigration and immigration again set in.

We have thus endeavoured to set out the elements that have entered into the development of our age distribution, including the effects of emigration and immigration. It may be stated here (although it seems unnecessary to illustrate the statement with figures as an abundance of tables is furnished in the Appendix to verify it) that not only are big movements in the past traceable in the general shape of the age distribution as above described but smaller or secondary movements are also traceable in the irregularities or contortions in the general shape. The question in the face of an irregularity, wherever it occurs in the succession of age groups, is: "At what date were these either 0–4 or 20–24 years of age?" (*i.e.*, the age immediately following birth or emigration or immigration). Usually we find that the date corresponds to a secondary movement in the history of the population. Tertiary and smaller movements, unless very recent, are not apparent as they are smoothed out by death or covered up by the larger movements. This makes it very difficult to uncover such phenomena as age mis-statements. What may be said of such phenomena is that they reveal themselves by certain hall-marks, such as preferences to certain digits and excesses or defects at strategic points. However, while these hall-marks disclose such phenomena, it is here contended that we cannot measure them until we have first determined the fundamental and secondary shapes. These can be then used as norms or points of reference.

One phenomenon in connection with the development in 1931 has not yet been mentioned. For the first time in the history of the Canadian age distribution, the first quinquennial group was smaller than the second. In certain studies published on the subject, particularly in reference to the United States population (where the same phenomenon occurred), this is regarded as significant and as pointing to the approach of a decreasing population. Now in our description of development the possibility of the decreasing population has not been admitted. It will require much stronger evidence than has hitherto been supplied to bring conviction that this is a possibility. Decrease for a time, yes, but a permanent trend of decrease is doubtful in the face of existing evidence. A great deal of material has been gathered for the purpose of studying this point with reference to the Canadian population. Since, of course, no study of decrease in the case of the Canadian population as a whole could be made, it was considered a proper mode of attack to take the population in parts in 1931 and study the shapes of increasing and decreasing populations. In Statement G and Chart IV in the Appendix, is shown a division of the population of Canada as of 1931 into eight parts. These eight divisions are the aggregation of the populations of counties stationary or decreasing since 1851, 1861, 1881, 1891, 1901 1911, 1921 and those still increasing in 1931 (no county was found to begin decreasing in 1871). A further study was made of individual cities showing the first quinquennial group smaller than the second, the second smaller than the third, and so on (see Table 3, Part II, page 810). Of the latter there

are very many varieties, *e.g.*, in the British Columbia population we find the maximum age groups appearing in the thirties or forties. Now, since we actually have more than a dozen age distributions in which various age groups turn out to be the largest one of the series, it seems rather premature to draw any particular conclusion from the fact that, for the first time, the aggregate of these varieties turns out to have the first group smaller than the second. One would be inclined to call it an accident until further proof is forthcoming. It just happened to occur at this particular spot. If, when the country was broken up into parts, the majority of the parts showed this tendency to have the first group smaller than the second, then the evidence would be more satisfactory. As it is, it does not occur in the majority of cases. Rather, what seems to happen is that A is smaller than B because B is abnormally large. We have already given an historical account of phenomena which could bring this about in Canada. The birth rate in the first half of the decade 1921-31 was abnormally high in relation to trend. This, of course, would make the number at ages 5–9 abnormally large. The fact that the number at 0–4 was smaller than this may mean that the birth rate has come back to trend or, as usually happens in phenomena of this kind, has temporarily fallen below trend as a reaction to the previous excess. It may, of course, mean that the birth rate has permanently settled down to a decrease but it seems a premature conclusion, especially as the years in question not only were partly years of economic depression but partly years of heavy immigration when motion alone would tend to check birth rates. Motion has already been shown to be a very important determinant of the age distribution. The study of the eight groups (the decreasing populations) is interesting in view of the fact that it disclosed little or nothing of the effects of decrease upon the shape of age distribution in so far as the general shape was concerned. Rather, it was reflected in giving to one and all of the decreasing populations the double shape of the 1921 distribution. This, of course, was due to the fact that the decrease was largely the result of emigration but without doubt the natural increase went down as well. To show this, the 1931 rates of natural increase in these eight groups of counties are also shown in Statement G of the Appendix. If there is a fairly steady progression of decreasing natural increase among these eight groups even in the case of one year, it should indicate something.

Conclusion.—In concluding this chapter it seems necessary to summarize two facts:—

1. That age distribution has undergone a fairly steady and rapid pace of development showing a stage at every census between 1881 and 1931 but an exceptional case or, rather, a poorly defined stage, in 1921.

2. That the chief determinants in the development were the length of settlement and rate of increase but particularly the changes in the rates of increase, changes which were further defined as *motion*. In this motion emigration and immigration played very important parts.

To illustrate the second fact still further the population of 1931 was divided into two parts or populations by age groups. (This was possible for the first time in 1931.) The one population consisted of Canadian born with their children; the second, immigrants with their children whether born abroad or in Canada. The Census of 1931 shows by quinquennial age groups the immigrant population and also the Canadian born with immigrant parents. The only approximations that were necessary were the Canadian born, one of whose parents was immigrant, the other native. In this case half were credited to the Canadians and half to the immigrants. The error in estimation here was so slight that it is hardly worth mentioning.

Statement J in the Appendix shows, in comparison, the two populations. The difference can readily be detected. The immigrant (and children) are throughout what might be termed a middle-age population; the Canadian born are a full population. Clearly, immigration has had a powerful effect in hastening the development of the age distribution of the Canadian population as a whole.

The effects of emigration are more subtle. These have to be studied in the native population (with children). According to the method of measuring development shown in the Appendix, this population in 1931 had only reached a stage of development between that of Canada in 1891 and in 1901. This seems astounding and the first question that suggests itself is whether, in spite of the elimination of immigrants and their children from this population, immigration had the effect of rejuvenating the native population. This seems untenable in the face of a much more reasonable explanation. The rejuvenation is credited to emigration, not immigration. It will be necessary to show clearly how this would work.

First, we have to remember that we are examining a native population so that complications arising from immigration no longer come in.

As above mentioned, there was a huge wave of emigration from Canada between 1881 and, say, 1896. This emigration occurred at the late teens and early twenties. The number was close to a million, more or less, judging from the increase in that period in Canadian born living in the United States. The first results of this would be to leave a depression in the native population at the ages of movement and, as the movement extended over about twenty years and became progressively smaller, this depression would spread and become more smooth. Now, by 1931 the ages which these emigrants vacated would be ages about 50 to 80, while the older population living in Canada at the beginning of the movement would be dead in 1931. The result was an abnormally low number at ages 50 and over with a reasonably high number at younger and younger ages, reinforced by the higher birth rates around 1921 and in spite of subsequent emigration. The returning Canadians in the latter half of the decade would probably be largely Canadians who had left Canada early in the decade so that this earlier emigration was not so apparent in 1931. This, as can readily be seen, would have the effect of rejuvenating the native-born population. It also shows the part emigration can play although it played other parts as shown earlier in the chapter. Death, of course, in the meantime acted merely as a smoothing agent but naturally it would have the effect of making the survivors of the remnant left in 1881-96 still smaller than those at earlier ages in 1931.

CHAPTER II

CLASSIFICATION OF AREAS BY AGE TYPES

In the Introduction, Chapter I and the Appendix an effort was made to arrive at a basis of classification by age types. Such a classification is necessary because such concepts as mean ages, median ages, etc., fail to bring out functional differences in age distribution since the same mean age can be arrived at by different types of age distribution. Besides, it is submitted, such a concept as mean age is illogical if we consider a "mean" as a centre from which the dispersion radiates. If we procure types different in function we have at least arrived somewhere.

Threefold Index.—It was pointed out that there are three phases in the age distribution (especially of such countries as Canada, populated so largely by immigration) which determine type, *i.e.*, the early, middle and old ages. Reasons are given in the Appendix for setting boundaries to these phases at (1) under 25 years of age, (2) 25–64 years of age and (3) 65 years of age and over. Since the proportion of the population in the second phase is given by the proportions in the first and third (*e.g.*, if the first and third are large, the second must be small), it seemed desirable to characterize the second in some other way than by size. If the middle portion of the population, *i.e.*, the adult population, is young or old, this not only indicates the trend of the whole towards youth or old age but, as will be seen more conclusively in the next chapter, indicates whether the immigrant or mobile population, of which the middle portion largely consists, is recently immigrant and very mobile or has been in the country for some time and thereby lost some of its mobility. In forming a threefold index for the classification of areas by age type the percentage of the population under 25 was taken as the first member, the percentage 65 and over as the third member, while for the middle member a peculiar quantity designated as "standard age" was taken. This "standard age" was measured by squaring the different quinquennial groups from 25 to 64, averaging these squares and extracting the square root.

It will help us to realize the significance of this threefold index if we show the progress of its members through the different censuses of Canada, beginning with Quebec, males, 1881 as a young age type, Canada, 1881 as a somewhat older, and so on up to 1931, as follows:—

I.—AGE STRUCTURE OF QUEBEC, MALES, 1881 AND CANADA, MALES, 1881-1931

Item	P.C. under 25 Years	Standard Age	P.C. 65 Years and over
		years	
Quebec, males, 1881	61·0	21·2	4·5
Canada, males—			
1881	59·7	21·4	4·3
1891	56·8	21·3	4·7
1901	53·9	21·5	5·1
1911	51·0	20·7	4·5
1921	50·4	21·6	4·7
1931	49·3	22·3	5·5

From this statement it is easy to see what has actually happened. The proportions at the younger ages have steadily declined but this decline in 1911 was not because the population aged, for the proportion at the older ages also dropped, but because the middle age* increased owing to an increase in immigration from 41 p.c. in 1901 to 44·5 p.c. in 1911. Notice also how the recent immigration or mobility is borne out by the fact that the standard age dropped from 21·5 years in 1901 (having increased up to then) to 20·7 years in 1911. The threefold index, then, is quite sensitive to three processes, *viz.*, natural increase, mobility and general ageing of the population. As such it should enable us to indicate age distribution correlating with functions of ages in the population much better than such an index as the mean age of the population, which might increase by several channels, *e.g.*, a decline in birth rate, an increase in persons at old ages, a static population, etc.

* That is, the percentages under 25 years plus those 65 years and over subtracted from 100

We have now reached a difficulty in classification, *viz.*, the arrangement of this threefold index, when applied to areas, in such a manner that it may indicate some kind of progression. This would be simple enough in the case of a single index like mean age, for it would be sufficient to arrange these means in order of size. This is impossible in the case of a threefold index.

It would also be easy to classify the age types according to a functional progression. This will be seen in the next chapter; but the objection to this is that an age type progressing according to one function does not progress similarly according to another function. We need a classification that will be descriptive of different age types independently of function.

Since, for the moment, we are not concerned with quantitative progression, it will be sufficient to refer such quantitative progression as will be used to the average, without regard to how far from the average each class extends. The two hundred and twenty counties and census divisions of Canada* were averaged for the three phases of age. The three averages may be designated by the notation 51·4—22·5—6·3. The counties were then arranged in relation to these averages with a view to placing the younger age types at one extreme, the older at the other extreme and those with large proportions at the middle ages in the centre. If we use the notation "h" for above average and "l" for below average, we have the following four classes each with two subdivisions.

II.—AGE-TYPE CLASSES AS RELATED TO AVERAGE OF THREEFOLD INDEX FOR 220 COUNTIES AND CENSUS DIVISIONS OF CANADA,[1] WITH NUMBER OF COUNTIES OR CENSUS DIVISIONS FALLING INTO EACH CLASS, CANADA, MALES, 1931

Class	Age Type	No. of Counties Falling into Class	Class	Age Type	No. of Counties Falling into Class
IA	hll	56	IIIA	lll	37
IB	hhl	11	IIIB	lhl	12
IIA	hlh	6	IVA	llh	2
IIB	hhh	33	IVB	lhh	63

[1] Omitting Yukon and Northwest Territories.

In the case of hll (IA) the proportion under 25 is above average, the proportion 65 and over is below average and the middle group is younger than average. Clearly this is a young type. Again, in IIIA (lll), since the proportions under 25 and 65 and over are both below average, it is clear that the proportion at the middle ages is above average, *i.e.*, there is a large middle-age population and it is of a young type. Similarly, in IVB (lhh), the smaller proportion at the younger ages and the larger at the older ages combined with an older middle-age type show that the class is an old type. It will be noticed that the four classes occur in pairs, A and B, according as the middle age is older or younger, *viz.*, a pair of the younger type with larger proportions at the younger ages; a pair of the older type with higher proportions at the older ages, etc. The definitely middle type is III, while II is intermediate between the younger and middle. The younger, middle and older types are fairly evenly represented among the counties and census divisions of Canada. It would seem that four main classes are sufficient for a threefold index, as a finer classification would tend to disguise the type. Obviously, if we can arrange our age distribution satisfactorily into four main types we have gone a long way. It will be interesting to see how the age types of Canada in the past, when referred to the same average as the counties of 1931, fall into classes. The result is as follows:—

Quebec, males, 1881 ..... IA

Canada, males—

1881 ..... IA
1891 ..... IA
1901 ..... IA
1911 ..... IIIA
1921 ..... IIIA
1931 ..... IIIA

* Omitting Yukon and Northwest Territories

This shows that 77 counties of Canada had in 1931 progressed further than the average of all counties of Canada in 1931 (see Statement II), while 56 are at the stage of Canada before 1911 and 37 are at the stage of Canada during the present century, *i.e.*, with a definitely middle-age population. If we take the main classes, 67 are definitely pre-nineteenth century; 65 are definitely post-1931, while 49 are definitely a middle-age population corresponding to Canada, 1911 and 1921; the remaining 39 lean towards a young type. The comparison with Canada at different dates indicates that the classification is not sufficiently fine to differentiate between the different censuses; however, this will be effected sufficiently by the functional classification in the next chapter. Moreover, it is not this we desire in the present classification, but a definite differentiation between the middle-class types of the present century and the younger or older of other periods or, in other words, the immigrant and mobile types from the static. It will be seen further on that the present classification effects this differentiation satisfactorily. In the next chapter it is shown that the most mobile is Class IIIA and that this class shows the lowest death rates. On further examination it will be noticed that IIB has a large proportion of both young and old persons and, consequently, a small proportion of middle-age persons, while the latter are advanced from the early to the late middle ages. This class will be shown to have the highest death rates. Similarly, IIIA shows a small proportion of both young and old persons and, consequently, a large proportion of middle-age persons, the latter being in the early middle ages.

This, on the face of it—a young adult population—is a definite condition for low death rates. It might also be expected that Class III would have very definite functions in relation to employment, earnings, marriages, etc. Classes II and III could be placed at opposite extremes except for the fact that they would not show a logical progression of ageing. It is not ageing that differentiates these two classes but immigration and also emigration. An abnormally small middle-age population is usually brought about by some type of emigration in which type we may include that caused by the Great War. An abnormally large middle-age population is brought about by immigration. The movement either in or out is at the early middle ages usually termed the "early adult ages," but we prefer the use of the term "middle" to that of "adult" as the latter is both technical and indefinite. Consequently, in the above classification it is not illogical to find the population age type produced by emigration next to that produced by immigration.

Male Types.—We are now ready to show the divisions of Canada falling into each type. This is done for males in Table 1a, Part II, page 796.

The different types bring out some interesting features, geographical and other. Perhaps the most interesting type is the main one, Class III, *i.e.*, the immigrant or mobile type. It will be understood that by "immigrant" is meant not only persons moving in from outside Canada but also from one part of Canada to another. IIIA is the younger middle-age and IIIB the older middle-age type. It is clear that IIIA is found in the Prairie Provinces and British Columbia, in the new parts of the Eastern Provinces and in the counties of the Eastern Provinces which are largely urban or affected by recent activities bringing population to centres. Examples of this type are Halifax in Nova Scotia, Beauharnois and Montreal Island in Quebec and Essex, Welland, Wentworth and York in Ontario. The older middle-age type (IIIB) is very much the same except that its members are found mainly in Manitoba and British Columbia, while those of IIIA are found in Saskatchewan and Alberta. Type IIB is also interesting. A very hasty examination is sufficient to show that it is an emigrant type, *i.e.*, that its peculiar age distribution has been powerfully affected by emigration.

Type IA, found almost entirely in Quebec and such parts of the Prairie Provinces as have had a high birth rate, shows a process that took place after the immigration in the Prairie Provinces. Immediately after the period of heavy immigration these provinces had the characteristic middle-age type. Then, immigrants either married or brought in their wives. The heavy birth rate which ensued changed these counties suddenly from a middle-age to a young population. This sudden change might be expected to have great social consequences, *e.g.*, an economically irresponsible population of single young adult males was suddenly changed to a highly responsible population of young families. The habits of lavish expenditure formed during the irresponsible stage would no doubt make the conditions more severely felt when not only the responsibility suddenly increased but prosperity waned. It is a question whether this phase of the situation has attracted the attention it deserves.

Type IVB (lhh) is the ageing type with a small proportion at the younger ages and, consequently, a large proportion at the middle ages; this latter proportion is at an advanced age and also there is a large proportion at the older ages. This type should be characteristic of a country built up from immigration in the more or less remote past and of one with a low birth rate.

Pure Types.—Attention is drawn once more to the fact that there are only four main classes, occurring in pairs. Those coming closest to representing pure types are:—

IA (hll), the youthful type presupposing a high birth rate;
IIB (bhh), what we believe to be the emigrant type;
IIIA (lll), the recent immigrant and mobile type;
IVB (lhh), the elderly type.

It will be noticed from an examination of the counties representing the various classes that these types are not pure, *i.e.*, that, if they represent what we think they do, some counties are not altogether true to type. This is to be expected, not only because we hardly ever find statistical data conforming to any law to the extent that every member of a series fits exactly into place, but also because the rough and ready method of separating the types (*i.e.*, referring to each member of the series as being above or below the general average) is not quantitative. Some that are shown as above the average may be so close to the average that there is no significant difference between them and others which are equally close, but below average. It is analogous to sifting grain through a coarse sieve. The method, however, has the same advantages as this method of separating grains because we can always re-sift. This will presently be done to remove those too close to the average, but first a re-sifting will be carried out to bring out the definitely pure types as just listed. The method followed in doing this may be illustrated by taking type IA. The 56 counties representing this type were averaged and the "high-low-low's" ascertained. These may be designated by IA_1. These were in turn averaged and their "hll's" were found and designated by IA_{1a}. Thus these, passed through three siftings, should be quite pure. Similarly, the pure type of IIB may be designated as IIB_{4d}, of IIIA as $IIIA_{5e}$ and of IVB as IVB_{8h}. These should show such counties as are pure types and a study of their characteristics should enable us to find the functional characteristics which separate them.

III.—AGE STRUCTURE OF PURE TYPES OF AGE CLASSES ARRIVED AT BY THREE SIFTINGS OF THE INFORMATION CONTAINED IN TABLE 1a, PART II

County or Census Division	P.C. under 25 Years	Standard Age	P.C. 65 Years and over
		years	
Type IA_{1a}—			
Chicoutimi, Que.	63·4	20·2	2·9
Lac-St-Jean, Que.	64·7	20·7	3·2
Type IIB_{4d}—			
Kent, N.B.	58·8	23·3	7·5
Type $IIIA_{5e}$—			
Cochrane, Ont.[1]	44·9	18·5	1·8
Type IVB_{8h}—			
Grenville, Ont.	43·0	24·4	11·6
Huron, Ont.	42·7	24·6	12·1
Victoria, Ont.	44·0	24·1	11·0

[1] There are no really pure types of this class but Cochrane which is of type $IIIA_{5a}$ is the county most nearly approaching the distribution.

Statement IV shows the percentage age distribution of a pure-type county of each class and Chart 4 shows the general shape of each type.

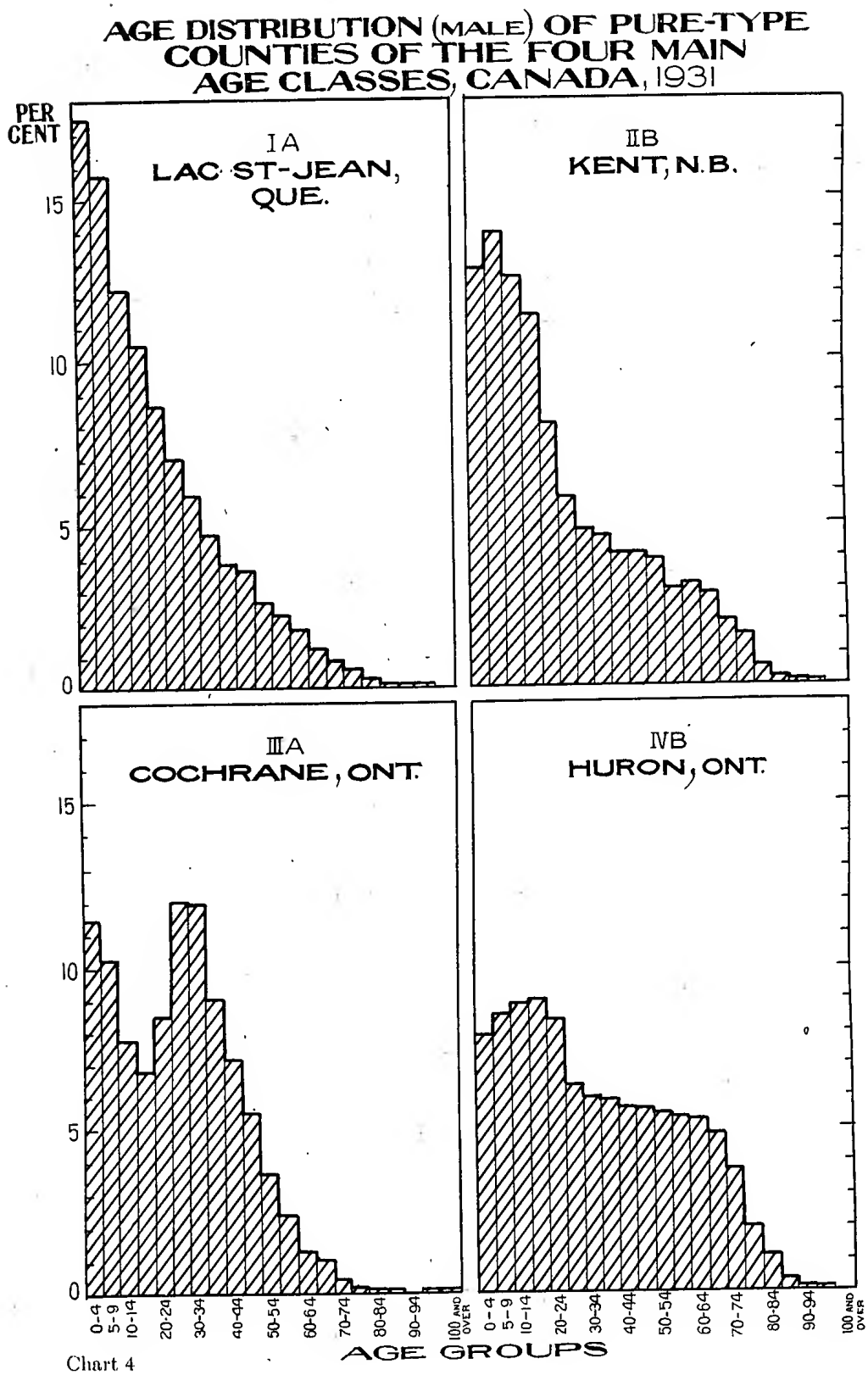

AGE DISTRIBUTION (MALE) OF PURE-TYPE COUNTIES OF THE FOUR MAIN AGE CLASSES, CANADA, 1931
PER CENT
IA
LAC ST-JEAN, QUE.
IIB
KENT, N.B.
IIIA
COCHRANE, ONT.
IVB
HURON, ONT.
0
5
10
15
0-4
5-9
10-14
20-24
30-34
40-44
50-54
60-64
70-74
80-84
90-94
100 AND OVER
AGE GROUPS

Chart 4

IV.—PERCENTAGE DISTRIBUTION OF MALE POPULATION IN PURE-TYPE COUNTIES OF THE DIFFERENT AGE CLASSES, BY QUINQUENNIAL AGE GROUPS, CANADA, 1931

Age Group	IA Lac-St-Jean, Que.	IIB Kent, N.B.	IIIA Cochrane, Ont.	IVB Huron, Ont.
	p.c.	p.c.	p.c.	p.c.
All ages[1]	100·00	100·00	100·00	100·00
0– 4	17·49	12·83	11·48	7·92
5– 9	15·76	13·92	10·30	8·56
10–14	12·23	12·57	7·77	8·84
15–19	10·52	11·39	6·81	8·99
20–24	8·67	8·09	8·53	8·36
25–29	7·08	5·83	12·06	6·35
30–34	5·95	4·81	11·98	5·03
35–39	4·76	4·66	9·06	5·85
40–44	3·87	4·13	7·22	5·60
45–49	3·67	4·12	5·58	5·55
50–54	2·68	3·93	3·67	5·43
55–59	2·29	3·02	2·40	5·31
60–64	1·82	3·19	1·31	5·23
65–69	1·21	2·85	1·01	4·80
70–74	0·88	2·00	0·48	3·70
75–79	0·63	1·61	0·21	1·98
80–84	0·32	0·64	0·08	1·11
85–89	0·11	0·27	0·02	0·39
90–94	0·03	0·11	–	0·07
95–99	0·01	0·02	0·01	0·02
100 and over	[2]	–	0·01	–

[1] Persons of unstated age are omitted.
[2] Less than one one-hundredth of one per cent.

Another way of sifting is to remove such counties as come within an insignificant distance from the average for Canada in respect to one or other or all of the three phases—pereentage under 25 years, standard age and percentage 65 years and over. This ean be done by finding the standard error of the mean of each phase and eonsidering any county within three of these standard errors as being within an insignificant distanee from the mean. The means, standard deviations, three times the standard error of the means, and field of the true mean of the different phases are as follows:—

Item	P.C. under 25 Years	Standard Age	P.C. 65 Years and over
		years	
Mean	51·4	22·5	6·3
Standard deviation	6·21	1·14	2·44
Three times error of mean	1·25	0·23	0·49
Field of true mean	50·1—52·7	22·3—22·7	5·8—6·8

Going back now over the list* of counties under each type, the indices of each phase of age coming within an insignificant distance of the mean of that phase, *i.e.*, coming within the field of the true mean as shown in the last column above, will be starred. It will be noticed that only one county is exactly average in all three phases, *i.e.*, Halifax, N.S. The starring is useful in that it eliminates those which are not pure types and shows what the different types represent. It is of particular interest to bring out the pure types of IIB (hhh), since this is suspected of being the emigrant type. We shall now list such of IIB as seem to be undoubtedly pure.† There are, in all, 13 counties, as follows:—

V.—PURE-TYPE COUNTIES OF AGE CLASS IIB, SHOWING AGE STRUCTURE, INCREASE IN POPULATION, 1921-1931, BIRTH RATE AND NATURAL INCREASE, CANADA, MALES, 1931

Province	County	P.C. under 25 Years	Standard Age	P.C. 65 Years and over	Male Population			Birth[1] Rate, 1931	Natural Increase, 1931 (calendar year)
					1931	1921	Increase		
			years						
Nova Scotia	Inverness	54·2	24·7	9·2	11,235	12,421	−1,186	19·1	71
	Richmond	52·9	24·4	10·5	5,875	6,579	− 704	20·9	66
New Brunswick	Kent	58·8	23·3	7·5	12,279	12,317	− 38	30·3	256
Quebec	Bagot	56·4	23·0	8·0	8,489	9,003	− 514	29·0	141
	Deux-Montagnes	53·8	22·9	8·0	7,328	7,333	− 5	25·8	100
	Montcalm	55·6	22·9	6·9	7,051	7,075	− 24	29·4	125
	Nicolet	57·1	23·1	6·9	14,282	14,841	− 559	31·2	249
	Pontiac	53·8	23·6	7·3	11,512	10,679	833	23·7	162
	Rouville	54·8	23·0	7·9	7,012	6,852	160	25·3	106
	Soulanges	54·9	23·3	7·6	4,641	5,115	− 474	24·8	53
	Stanstead	53·8	23·1	7·0	12,619	11,714	905	25·1	227
	Yamaska	57·7	22·9	7·8	8,433	9,028	− 595	31·8	180
Ontario	Prescott	56·1	23·1	7·0	12,618	13,429	− 811	28·5	219
	Total	.....	.....	.....	123,374	126,386	−3,012	.....	.....

[1] Birth rate per 1,000 total population.

In the first place it is seen that the male population decreased between 1921 and 1931 in all but three of these counties and that there was an aggregate decrease of 3,012. The high proportion at the young ages indicates a fairly high birth rate. The natural increase shows that the population would have grown considerably if the natural increase had remained. It is evident, then, that these places have been reduced to stationary or decreasing populations by means of emigration. If we take Inverness, N.S. as representative of the type, we have the age distribution in 1931, by stated ages, as shown in Statement VI and Chart 5.

* See Table 1 a, Part II, page 796.
† Above the upper limit of the field of the true mean in all three phases.

VI.—NUMERICAL AND PERCENTAGE DISTRIBUTION OF MALE POPULATION, BY QUINQUENNIAL AGE GROUPS, INVERNESS, NOVA SCOTIA, 1931

Age Group	Male Population, Inverness, Nova Scotia		Age Group	Male Population, Inverness, Nova Scotia	
	No.	P.C.		No.	P.C.
All ages[1]	11,233	100·00	50–54	555	4·94
			55–59	498	4·43
0– 4	1,139	10·14	60–64	428	3·81
5– 9	1,289	11·48	65–69	342	3·04
10–14	1,334	11·88	70–74	297	2·64
15–19	1,326	11·80	75–79	194	1·73
20–24	995	8·86	80–84	124	1·10
25–29	624	5·56	85–89	55	0·49
30–34	473	4·21	90–94	17	0·15
35–39	518	4·61	95–99	4	0·04
40–44	465	4·14	100 and over	1	0·01
45–49	555	4·94			

[1] Persons of unstated age are omitted.

It would seem that the chart speaks for itself. In the case of Inverness (IIB) there is a manifest shortage of males at ages 25–44, with a strong tendency to shortage at 20–24. This is undoubtedly the result of emigration, not only of males in their early twenties but also emigration that has been in progress for some years. The population of Inverness (both sexes) increased between 1901 and 1911 and has been decreasing since that time. An increase of over 1,000 in 1901-11 was immediately followed by a decrease of nearly 3,000 in 1921-31. If both the increases and decreases (by emigration) were taking place between the ages of twenty and thirty, the result would be exactly as shown in the chart. We are, therefore, justified in regarding Type II as the emigration age type.

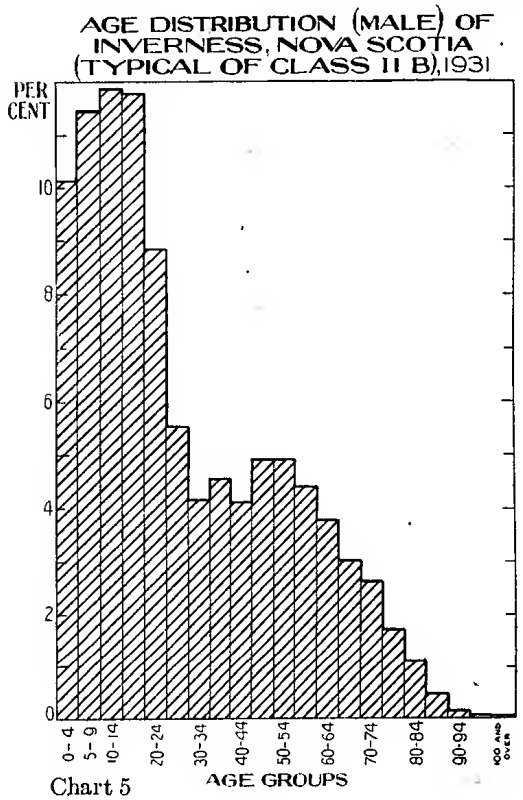


Chart 5

Now that we have practically established that the four main classes of age distribution into which the counties and census divisions have been divided represent (1) primitive or young types, (2) emigration, (3) immigration or mobile and (4) old types, it will be useful to show these types as arranged on a map of Canada. This is done in Map I, the main types only being distinguished.

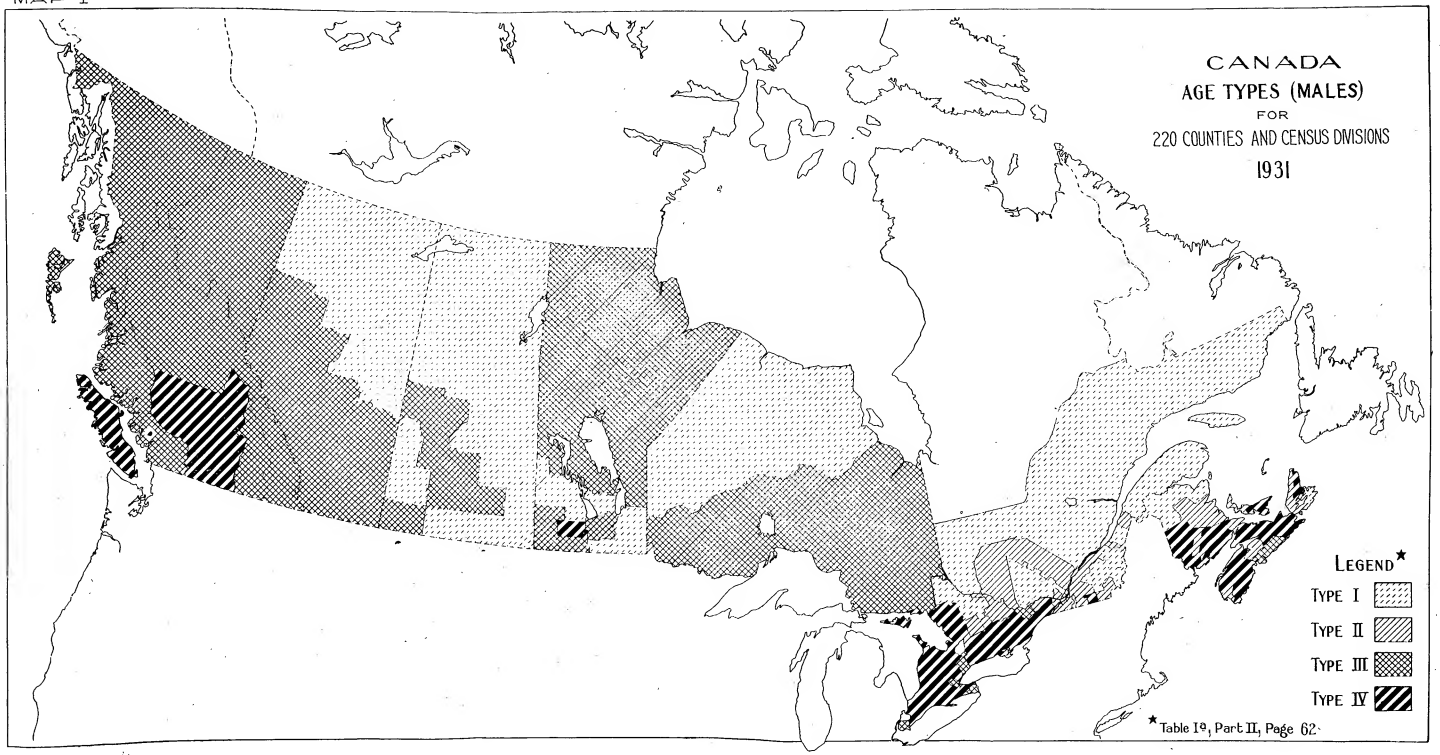
Average Types.—A discussion of age types would be incomplete without including average types. These are the types starred in Table 2a, *i.e.*, they do not depart sufficiently far from the average to be classified definitely under any type. Averages are just as intriguing as startling exceptions. What are the characteristics that make any individual conform to the average of all? To illustrate, we take the one county in Canada, Halifax, N.S., that conforms in all three phases to the average of Canada and show its quinquennial age distribution along with that of Canada in the following statement. Then the two are shown side by side graphically in Chart 6.

VII.—PERCENTAGE DISTRIBUTION OF MALE POPULATION, BY QUINQUENNIAL AGE GROUPS, CANADA AND HALIFAX, NOVA SCOTIA, 1931

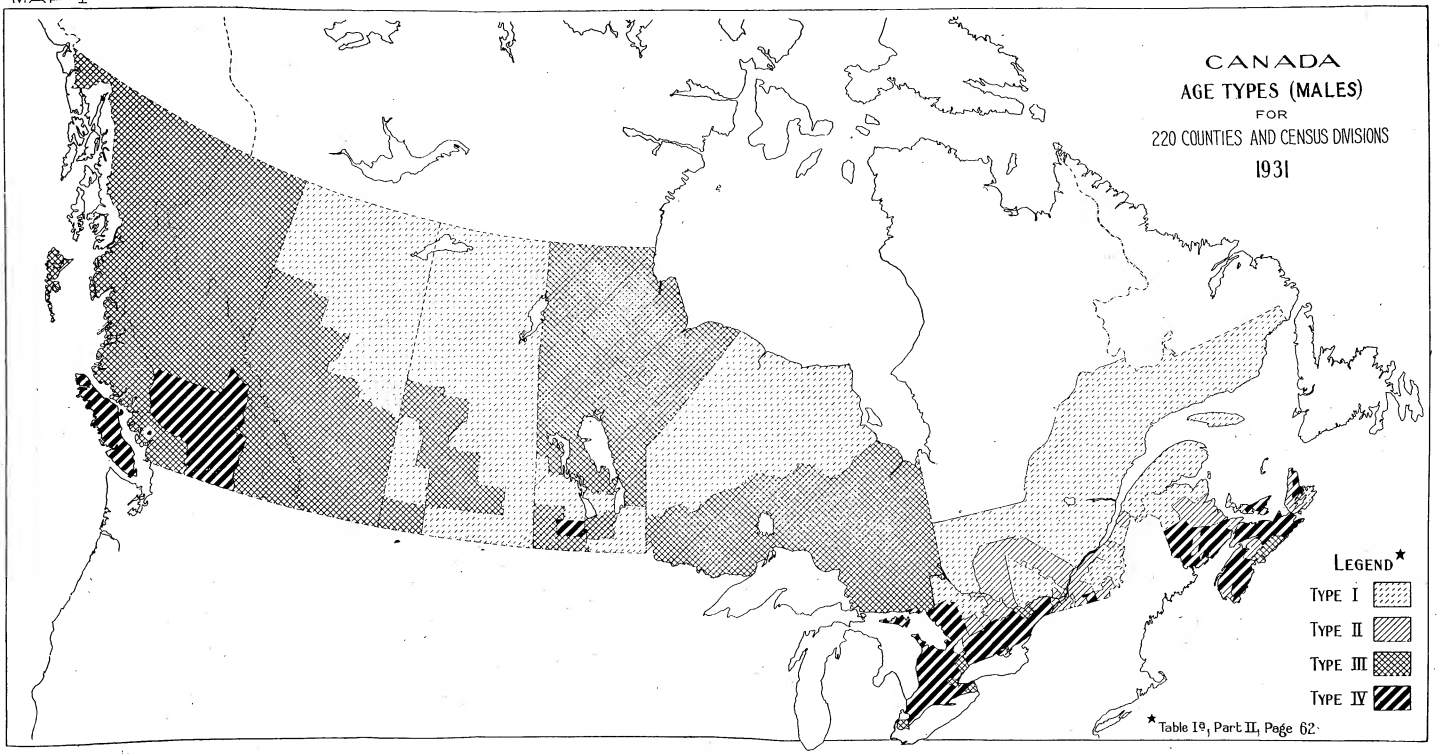
Age Group	Canada	Halifax, Nova Scotia	Age Group	Canada	Halifax, Nova Scotia
	p.c.	p.c.		p.c.	p.c.
All ages[1]	100·00	100·00	50–54	4·98	4·78
0– 4	10·11	10·52	55–59	3·71	3·49
5– 9	10·66	10·75	60–64	2·92	3·17
10–14	10·11	10·45	65–69	2·25	2·53
15–19	9·78	9·51	70–74	1·65	1·63
20–24	8·63	8·96	75–79	0·93	1·00
25–29	7·63	7·23	80–84	0·44	0·54
30–34	6·85	6·94	85–89	0·16	0·22
35–39	6·68	7·11	90–94	0·04	0·05
40–44	6·47	6·03	95–99	0·01	0·01
45–49	5·99	5·09	100 and over	-	-

[1] Persons of unstated age are omitted.

MAP I


CANADA
AGE TYPES (MALES)
FOR
220 COUNTIES AND CENSUS DIVISIONS
1931
LEGEND*
TYPE I
TYPE II
TYPE III
TYPE IV
*Table 19, Part II, Page 62.

MAP I


CANADA
AGE TYPES (MALES)
FOR
220 COUNTIES AND CENSUS DIVISIONS
1931
LEGEND★
TYPE I
TYPE II
TYPE III
TYPE IV
★Table 1a, Part II, Page 62.

There is no doubt that the age distribution of Halifax county is the same as that of the whole of Canada. This county is the only one in Nova Scotia in which the rural parts have never passed a point of maximum density. Further, it is largely urban, having one large city to which the population moving from rural parts of the county are apt to go. Consequently, it does not show the effects of emigration as other counties of Nova Scotia do. Its natural increase, immigration and emigration are, therefore, similar to those of Canada as a whole. There are 87 other counties in Canada which come close to the average in one or other of the three phases. These, as already mentioned, are starred in Table 2a. Most of these, however, differ from the average in one or other of the two remaining phases and cannot be regarded as average types. Only such as come fairly close to the average in all three phases will be shown here as follows:—

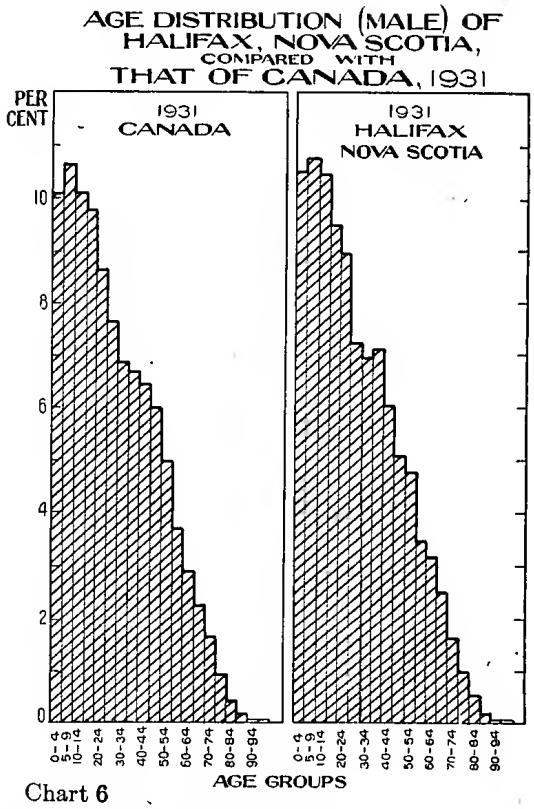


Chart 6

VIII.—AGE STRUCTURE OF COUNTIES OR CENSUS DIVISIONS APPROACHING CLOSELY THE AVERAGE IN EACH OF THE THREE PHASES, CANADA, 1931

County or Census Division	P.C. under 25 Years	Standard Age	P.C. 65 Years and over
		years	
Halifax, N.S.	50·2	22·3	6·0
Sunbury, N.B.	52·5	23·2	6·4
Sherbrooke, Que.	52·6	22·0	5·6
Vaudreuil, Que.	53·5	22·3	6·4
Parry Sound, Ont.	49·9	22·6	6·9
Division No. 3, Man.	50·9	22·4	5·7
Division No. 10, Man.	52·2	23·2	6·2
Division No. 11, Man.	51·0	22·7	5·5

It may or may not be significant that three out of the eight are in Manitoba.

Female Types.—We now come to the distribution of females by age classes in the counties and census divisions of Canada. It was considered desirable to refer the females to the male average rather than to their own. This is open to some objections, for the separation of females into age classes may well be possible only as a comparison of female with female, not female with male. Thus, if Class III is the immigration type for males referred to the male average, it need not be such for females as their age distribution is different. However, there are good reasons for referring all types to the same average. One is that the meaning of the nomenclature remains constant. Again, while female age structure is different from males and also, while it may be true that their ages of greatest mobility are different from those of males, the difference does not lower it a sufficient number of years to interfere seriously with the broad classification used. A female moves only a year or two sooner than the male. The difference in age structure between the immigrant male and female is just about the difference in age between husband and wife, *i.e.*, four or five years. These differences do not throw them out of class when the class is based upon the three phases, percentage under 25 years, standard age and percentage 65 years and over.

The distribution of females is shown by counties and census divisions in Table 1b, Part II, page 799.

The first thing to consider is whether any distortion of type has been caused by referring the females to the male average. It is important to settle this question as it is desirable, if possible, to bring the females and males into direct contrast. If we overlook the fact that some are mixed types, *i.e.*, types where one or other of the three phases is average, we have the following numbers representing each type.

IX.—NUMBER OF COUNTIES AND CENSUS DIVISIONS IN EACH CLASS OF AGE DISTRIBUTION, BY SEX, CANADA, 1931

Age Class	No. (including mixed types) of Counties or Census Divisions		Age Class	No. (including mixed types) of Counties or Census Divisions	
	Males	Females		Males	Females
IA	56	104	IIIA	37	9
IB	11	4	IIIB	12	5
IIA	6	10	IVA	2	4
IIB	33	25	IVB	63	59

It is true that too large a number of females occur in Class IA but it is clear from the fact that the opposite extreme, Class IVB, is almost as large for females as for males that the reason for this over-representation is a genuine difference between the age distribution of the two sexes, not a mere sliding back of the females because they were referred to the averages of the males. The fact that the intermediate classes are very small in the case of the female must mean, therefore, that this is a genuine sex difference.

The young and the old classes are well represented by both sexes but the males have secondary types while the females have not. This is seen by comparing the two sexes by quinquennial age groups. The female distribution is smoother than the male. The females run into fundamental types more than do the males, as discussed in the Appendix. It is the males that come into the country as single adults and simultaneously—the females come gradually. Again, female emigration has been more or less consistent over a long period of years. This would disguise somewhat the emigration age type. It is the occurrence of phenomena over short periods of time with breaks between these periods that causes the intermediate types. There is little doubt that the classification brings out real differences between the sexes. The female age distribution shows better than the male the rate at which the population is ageing. This knowledge should be of importance to calculations along the line indicated in the Appendix.

Aside from considerations of technique and theoretical interest, the facts are interesting. Young types are much more common among the females than the males. Old types are about equally common. Intermediate types are far more common among the males. The females are younger than the males chiefly because of the manner of settlement, immigration and emigration. The wife is younger than the husband and the population is largely constituted by the married, the very young and the old; further, the female unmarried is more apt to emigrate than the male. Referring to the classification in its broad form we see that Class II (the emigration type) is almost as large for females as for males. It is Class III (the immigration class) that is under-represented in the case of females.

X.—NUMBER OF COUNTIES OR CENSUS DIVISIONS, BY BROAD CLASSES OF AGE DISTRIBUTION AND SEX, CANADA, 1931

Age Class	No. of Counties or Census Divisions		Age Class	No. of Counties or Census Divisions	
	Males	Females		Males	Females
I	67	108	III	49	14
II	39	35	IV	65	63

As now arranged, the sex differences would appear to be quite genuine and easily explainable. Obviously, this shows that females have not been thrown into the wrong classes by being referred to the male average. The sliding down thus caused would have had the effect of increasing the intermediate classes, not decreasing them. Least of all was it possible that an interchange between Classes II and III would have been thus brought about. Further, the intermediate class that would have been increased was Class III and it is the only one almost wiped out. It would seem that we may be satisfied with the classification as it stands. If so, the sex difference is very important. There are four main age-types among the males—a young, emigrant, immigrant and old—while among the females there are only three—a young, emigrant and old. The females go in for fundamental types. Their age distribution is smoother than that of the males. They pass through even stages from youth to old age; the males do not. It would seem unnecessary to show this by diagrams as this ground has already been covered in the Appendix.

Changes in Age Types in the Prairie Provinces, 1931-1936.—The justification of referring females to the male average can be extended to referring populations at other dates and in other countries to the average of Canada males in 1931. It is particularly desirable to see what happened in the Prairie Provinces between 1931 and 1936. This was only a five-year period but it was a period of depression. From the fact that the population growth in the Prairie Provinces has been quite cyclical since 1901 and since these cycles correspond closely with economic prosperity and depression, it is reasonable to believe that a period of depression would result in an outward movement from smaller areas like the census divisions even if the movement extended no farther than from one division into another. The change in age structure, if any, during the period should be highly illuminating and we believe that we have a measure in these types that will show changes very effectively indeed. Statement XI will show the change in phases and types in the census divisions of these provinces between the two dates.

XI.—CENSUS DIVISIONS SHOWING AGE STRUCTURE AND CHANGES IN AGE CLASS, MALES, PRAIRIE PROVINCES, 1931-1936

Census Division	1931			1936			Age Type	
	P.C. under 25 Years	Standard Age	P.C. 65 Years and over	P.C. under 25 Years	Standard Age	P.C. 65 Years and over	1931	1936
		years			years			
Manitoba—								
Division No. 1	59·0	21·9	4·6	57·9	22·0	4·7	IA	IA
Division No. 2	58·9	21·4	4·5	57·3	21·5	4·8	IA	IA
Division No. 3	50·9	22·4	5·7	48·1	23·0	6·6	IIIA	IVB
Division No. 4	48·4	22·6	6·1	45·0	23·5	7·7	IIIB	IVB
Division No. 5	53·8	21·9	4·0	51·7	22·8	4·8	IA	IB
Division No. 6	45·0	22·2	4·1	43·3	23·3	5·2	IIIA	IIIB
Division No. 7	45·9	23·0	6·9	43·0	24·0	8·5	IVB	IVB
Division No. 8	48·6	22·8	6·1	45·1	23·3	7·9	IIIB	IVB
Division No. 9	49·9	22·7	4·6	46·9	23·7	5·6	IIIB	IIIB
Division No. 10	52·2	23·2	6·2	49·1	23·3	7·4	IB	IVB
Division No. 11	51·0	23·2	5·5	48·4	23·1	6·4	IIIB	IVB
Division No. 12	57·0	23·3	5·8	53·8	23·4	6·5	IB	IIB
Division No. 13	55·9	22·9	5·5	53·6	22·8	6·2	IB	IB
Division No. 14	55·5	22·2	5·3	53·5	22·6	3·9	IA	IB
Division No. 15	54·0	22·6	4·8	52·3	22·9	5·5	IB	IB
Division No. 16	48·1	20·2	3·2	49·6	21·0	3·5	IIIA	IIIA
Saskatchewan—								
Division No. 1	51·5	22·4	4·6	49·0	23·5	6·3	IA	IVB
Division No. 2	51·5	22·5	3·7	48·6	23·7	4·8	IB	IIIB
Division No. 3	53·6	22·0	3·0	52·6	23·9	3·6	IA	IB
Division No. 4	49·1	21·9	3·4	48·3	23·9	4·2	IIIA	IIIB
Division No. 5	53·5	21·9	5·1	50·9	22·6	6·0	IA	IIIB
Division No. 6	50·3	21·4	3·3	48·2	22·6	4·4	IIIA	IIIB
Division No. 7	50·8	22·3	3·1	48·7	23·8	4·3	IIIA	IIIB
Division No. 8	52·0	21·6	2·6	51·6	23·5	3·6	IA	IB
Division No. 9	57·7	21·7	4·2	55·1	22·1	4·9	IA	IA
Division No. 10	56·2	22·2	3·9	54·2	22·7	4·4	IA	IB
Division No. 11	49·2	21·8	3·1	46·9	23·5	4·3	IIIA	IIIB
Division No. 12	50·5	22·3	3·5	48·8	23·6	4·6	IIIA	IIIB
Division No. 13	52·2	21·8	2·8	51·7	23·6	3·6	IA	IB
Division No. 14	51·6	21·4	3·4	50·8	22·2	4·0	IA	IIIA
Division No. 15	55·7	21·0	3·8	54·3	21·7	4·2	IA	IA
Division No. 16	51·1	21·5	3·4	50·5	22·4	4·2	IIIA	IIIA
Division No. 17	50·5	21·9	3·6	50·0	22·5	4·1	IIIA	IIIB
Division No. 18	56·7	19·8	3·4	52·8	19·9	3·2	IA	IA

XI.—CENSUS DIVISIONS SHOWING AGE STRUCTURE AND CHANGES IN AGE CLASS, MALES, PRAIRIE PROVINCES, 1931-1936—Con.

Census Division	1931			1936			Age Type	
	P.C. under 25 Years	Standard Age	P.C. 65 Years and over	P.C. under 25 Years	Standard Age	P.C. 65 Years and over	1931	1936
		years			years			
Alberta—								
Division No. 1	49·1	22·1	4·0	47·9	22·7	4·8	IIIA	IIIB
Division No. 2	48·3	21·5	3·2	47·4	22·5	4·2	IIIA	IIIB
Division No. 3	48·4	21·5	3·4	47·4	22·4	3·8	IIIA	IIIA
Division No. 4	45·3	21·8	3·7	42·5	22·5	5·0	IIIA	IIIB
Division No. 5	48·0	22·5	3·6	45·7	24·4	4·5	IIIB	IIIB
Division No. 6	43·9	22·0	3·4	42·3	23·3	4·7	IIIA	IIIB
Division No. 7	50·3	22·5	3·9	48·7	23·7	4·7	IIIB	IIIB
Division No. 8	48·8	22·4	5·0	46·5	22·5	5·5	IIIA	IIIB
Division No. 9	45·8	22·0	4·0	45·4	22·3	4·5	IIIA	IIIB
Division No. 10	55·2	21·2	3·8	52·9	21·7	4·4	IA	IA
Division No. 11	47·8	21·9	3·9	45·8	22·7	4·8	IIIA	IIIB
Division No. 12	43·6	21·1	2·9	43·6	22·8	3·7	IIIA	IIIB
Division No. 13	56·1	21·6	3·6	55·9	22·5	3·8	IA	IB
Division No. 14	52·3	21·5	3·5	52·1	22·5	4·2	IA	IB
Division No. 15	49·9	20·6	2·8	49·7	21·9	3·9	IIIA	IIIA
Division No. 16	46·6	21·1	3·3	45·8	22·3	4·3	IIIA	IIIA
Division No. 17	52·7	21·0	3·9	52·9	21·1	3·9	IA	IA

In the first place it will be noticed that 33 out of the 51 divisions changed type in the five years. The question is in what direction they changed type. This may be seen in the following statement.

XII.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF THE CENSUS DIVISIONS OF THE PRAIRIE PROVINCES ACCORDING TO AGE TYPE, 1931 AND 1936, WITH THE NUMBER CHANGED IN THE FIVE-YEAR PERIOD

Age Type, 1931	Age Type, 1936								No. Changed	No. Unchanged	Total
	IA	IB	IIA	IIB	IIIA	IIIB	IVA	IVB			
IA	7	8			1	1		1	11	7	18
IB		2		1		1		1	3	2	5
IIA											
IIB											
IIIA					5	15		1	16	5	21
IIIB						3		3	3	3	6
IVA											
IVB								1		1	1
Total	7	10		1	6	20		7	33	18	51

This summary presents many interesting points. We see that many of the changes were to a higher category of the same type. However, the most noted changes were that, while 18 were in the youngest class in 1931, there were only 7 in it in 1936; while there was only 1 in the oldest class in 1931, there were 7 in it in 1936. The immigration class (III) contained practically the same number in both years but there was a definite shift from the younger to the older sub-class. There were no representatives in the emigration class (II) in 1931 and 1 in 1936, *viz.*, Division No. 12, Man. This one came in the young sub-class. On the whole, the direction of the changes shows that the method of classification is very good. The population became definitely older in 1936 but, if we regard each sub-class as a type, the two extreme types had 19 in 1931 and had only 14 in 1936, *i.e.*, the intermediate types gained. It would seem that in ageing they pass through the intermediate types.

That the ageing itself was definite enough may be seen as follows:—

Age Class	No. of Divisions 1931	1936
I	23	17
II	–	1
III	27	26
IV	1	7

It will be seen from the counties starred in Table 2a that the changes took place particularly among those near the average in one phase or other in 1931. While this tends to minimize the

importance of the changes, it shows clearly the behaviour of the process of ageing. We have, in 1936, one more county which has almost the same age distribution as Canada males in 1931, *viz.*, Division No. 5, Sask. It will contribute to scientific interest in the subject if we can show that when the ages of this division are taken by quinquennial groups and charted, the general shape is the same as Canada in 1931.

XIII.—PERCENTAGE DISTRIBUTION OF MALE POPULATION, BY QUINQUENNIAL AGE GROUPS, CANADA, 1931 AND DIVISION No. 5, SASKATCHEWAN, 1936

Age Group	Canada, 1931	Division No. 5, Saskatchewan, 1936	Age Group	Canada, 1931	Division No. 5, Saskatchewnn, 1936
	p.c.	p.c.		p.c.	p.c.
All ages[1]	100·00	100·00	50–54	4·98	4·82
0– 4	10·11	9·42	55–59	3·71	3·79
5– 9	10·66	10·35	60–64	2·92	3·07
10–14	10·11	11·08	65–69	2·25	2·22
15–19	9·78	10·84	70–74	1·65	1·76
20–24	8·63	9·24	75–79	0·93	1·22
25–29	7·63	7·69	80–84	0·44	0·50
30–34	6·85	6·31	85–89	0·16	0·22
35–39	6·68	5·96	90–94	0·04	0·07
40–44	6·47	5·89	95–99	0·01	–
45–49	5·99	5·57	100 and over	–	–

[1] Persons of unstated age are omitted.

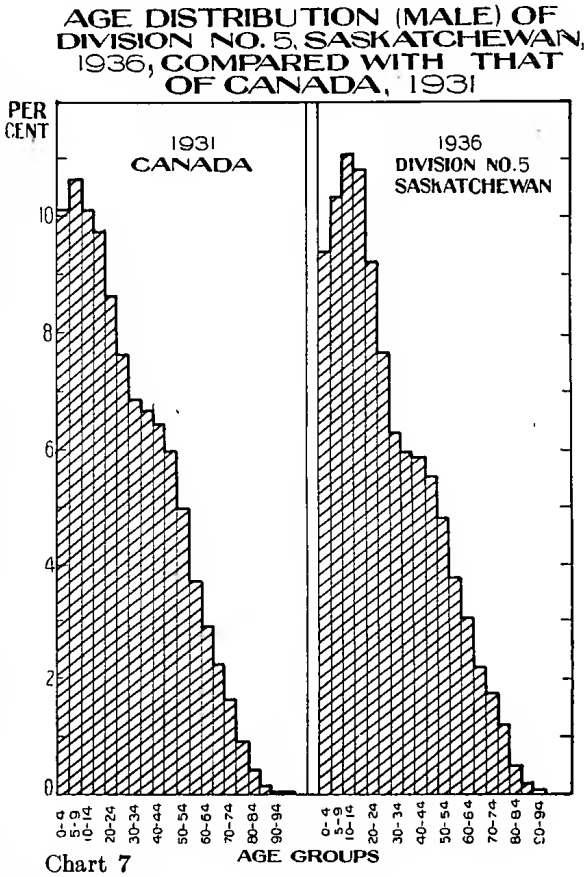


Chart 7

It would seem that the expectation that Division No. 5, Sask. would, in 1936, conform in general shape to the average of Canada in 1931 is fully justified. This confirmation that the three phases taken to describe age types actually picture the general age distribution is particularly strong because it is taken from a different and later census. We may take it as established, then, that the indices and types devised are doing what they were intended to do.

Summary.—This chapter has classified the areas of Canada into age types and the map of Canada marking these types shows the age structure of Canada as related to geographical areas. The young, emigrant, immigrant and old age types and where they are situated are closely connected with the history and manner of settlement of these areas. It must once more be mentioned that by "immigrant" and "emigrant" we do not mean merely those coming into Canada or leaving Canada—we mean "migrants," who may come from or leave for some other province of Canada or even for some other division of the same province. It is noticeable that the "immigrant" types are found in the new parts and in counties with large cities. The young types are found mainly in Quebec and in such of the new parts as have had large birth rates following a period of heavy immigration. It is seen that considerable changes took place in these new parts even in the short period of five years (1931-36) and that they are rapidly approaching (in age structure) the Canadian average. The old types are found mainly in the Maritimes, Ontario and Quebec, *i.e.*, the older settled parts. The emigrant types are found, or seem to be found, in areas that have had stationary or decreasing populations. The behaviour of these age types in relation to certain functions of the population will be shown in the next chapter.

CHAPTER III

CLASSIFICATION OF AREAS BY FUNCTIONAL ASPECTS OF AGE DISTRIBUTION

In Chapter II was given a classification of age types with their geographical distribution. The functions of these types were not stressed, although roughly indicated. In this chapter an attempt will be made to classify age distribution according to the functional aspects of age. While the types discussed in the last chapter will come into this classification they are not regarded as important as the threefold index on which these types were based. This threefold index was successful only to the extent of picking out four main types or eight sub-classes. It will now be shown that it is capable of affecting a much finer classification when related to functions. In fact, the age distribution as described by these three indices serves to some extent the same purpose as standardizing in the case of death rates, etc., where all the ages have to be considered.

The three functions on which emphasis will be laid are (1) the indigeneity of the population, (2) the age of settlement and (3) the death rates of residents, meaning, of course, the crude death rates.

Functional Aspects in Relation to Age Class Determined by Threefold Index.—If, first, we take the types as described in the previous chapter, ignoring for the present the indices on which they are based, we have the three scatter diagrams shown in Statements XIV, XV and XVI as follows:—

XIV.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 220[1] COUNTIES AND CENSUS DIVISIONS OF CANADA ACCORDING TO PERCENTAGE BORN IN PROVINCE OF RESIDENCE IN RELATION TO AGE CLASS, CANADA, MALES, 1931

P.C. Born in Province of Residence	No. of Counties in Age Class				
	I	II	III	IV	Total
90 and over	32	31		20	83
81–89	6	8	1	28	43
72–80	6		2	12	20
63–71	3		3	1	7
54–62	6		7		13
45–53	7		8	1	16
36–44	7		13	1	21
27–35			13	2	15
Under 27			2		2
Total	67	39	49	65	220
Approximate mean p.c. born in province of residence	77·3	92·9	44·9	83·2	74·6

[1] Omitting Yukon and Northwest Territories.

XV.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 209[1] COUNTIES AND CENSUS DIVISIONS OF CANADA ACCORDING TO AGE OF SETTLEMENT IN RELATION TO AGE CLASS, CANADA, MALES, 1931

Age of Settlement	No. of Counties in Age Class				
	I	II	III	IV	Total
10–14			2		2
15–19	10		17		27
20–24	11		8		19
25–29	6		7	1	14
30–34	5		2	2	9
35–39	8	1	4	1	14
40–44	15	6	1	8	30
45–49	9	15	1	27	52
50–54	2	15		23	40
55–59		2			2
Total	66	39	42	62	209
Approximate mean age of settlement	33·1	48·4	23·3	47·2	38·2

[1] Omitting Yukon and Northwest Territories, the ten divisions of British Columbia and District of Patricia, Ont.

XVI.—SCATTER DIAGRAM SHOWING FREQUENCY DISTRIBUTION OF 209[1] COUNTIES AND CENSUS DIVISIONS OF CANADA ACCORDING TO DEATH RATE IN RELATION TO AGE CLASS, CANADA, MALES, 1931

Death Rate	No. of Counties in Age Class				
	I	II	III	IV	Total
5	2		4		6
6	6	1	7		14
7	4		7	1	12
8	7	1	10	3	21
9	4	6	4	2	16
10	12	2	6	9	29
11	12	7	1	13	33
12	12	10	3	17	42
13	3	4		12	19
14	2	4		4	10
15		2		1	3
16	2	2			4
Total	66	39	42	62	209
Approximate mean death rate	10·0	11·7	8·0	11·5	10·3

[1] Omitting Yukon and Northwest Territories, the ten divisions of British Columbia and District of Patricia, Ont.

The percentage born in the province of residence in 1931 and distributed between counties and census divisions was taken as the measure of indigenous or static as compared with migrant or mobile populations. Naturally this is not a perfect measure, especially since persons born in the province in which the county was situated and moving into that county would be migrants as well as those moving in from other provinces or outside of Canada; similarly for those moving out. However, it is the best measure we have. It is obvious from Statement XIV that the four main types reflect very definite differences. Class II (the emigrant type) represents the highest

percentage indigenous, followed by Class I (the young) and then by IV (the old). This is a natural order. On the average, Class III shows considerably less than half (44·9 p.c.) of the population indigenous while there are only 13 counties out of 49 in this class that had more than half born in the province of residence. This class, then, is definitely an immigrant class. The thirteen exceptions are not real exceptions but rather represent either mixed types or counties with large cities whose migrant population would move largely from persons born in the province. This can be seen from Table 2a, Part II, page 803.

The age of settlement was obtained by weighting the number of years from 1931 at each census back to 1871, or if not to 1871 as far back as possible, by the populations at these censuses and thus striking an average. It might be expected that the oldest average age of settlement would be shown by Class IV (the old type) but here again Class II (the emigrant type) comes first. The reasons for this are that Class II contains the old populations as well as Class IV, except that Class II contains large elements both old and young and a small element of middle-age population. The fact that it is the emigrant age types that are found in the oldest settlements is very important indeed. The average age of settlement is increased to the extent that a population is stationary or decreasing; it is decreased by the fact that a population is increasing. This is obvious. However, this does not alter the fact that it is the oldest settlements that show emigrant age types. The order of correlation of age type with age of settlement is Class II, IV, I and III—a very natural order.

The death rates refer to deaths of residents in so far as this was possible. Here again Class II is well above the others, the order being Class II, I, IV and III. The emigrant type shows the highest death rates and the immigrant types the lowest, while the young type shows higher death rates than the old. Of course, it is in the young types that infantile mortality is heaviest. However, it is the differentiation between Classes II and III that seems the most important. The immigrant type contains the mobile type which the area has gained; the emigrant type has lost this mobile type. It is hardly necessary to show a statement giving death rates at different ages; it is well known that the middle ages have, on the whole, the lowest death rates. This can easily be verified by consulting life tables and, in the case of Canada, several interesting points relevant to death rates in the middle ages are given in the press matter accompanying *Canadian Life Tables, 1931*.* Coming back to the subject of this chapter, it seems very important that the shape of the age structure as indicated by the age class should show up such features as death potentialities.

Correlation of Functional Aspects with Threefold Index.—It will now be shown that a much finer gradation than that of the four main age classes or types can be made in relation to these three functions. The threefold index—percentage under 25 years, standard age and percentage 65 years and over—will be shown to be a classification in itself.

Table 2a, Part II, page 803, shows the counties and census divisions of Canada with their age indices, age type, percentage born in province of residence, average age of settlement and death rates both in absolute figures and in relation to age structure. Table 2b shows the same detail for females. The order of the divisions in Table 2a is the order in which the percentage born in the province occurs in relation to, or in so far as it is dependent upon, age structure, Hants, N.S., being at the top and Division No. 9, B.C., at the bottom. This needs some explanation and will be gone into presently. The indigenous versus the mobile population seemed the most important order as this seems to be the most important characteristic of age structure.

The manner in which age structure was related to the different functions is explained as follows:—

The threefold index already described was correlated (for example) with the percentage born in the province, by considering each element in the index as an independent variable and the percentage born in the province as a dependent variable, the equation being $X_1 = a + bX_2 + eX_3 + dX_4$ where X_1 = percentage born in the province, X_2 = percentage under 25 years, X_3 = standard age and X_4 = percentage 65 years and over. The statement below shows the various moments and correlations obtained not only in this case but also where the age indices were correlated with age of settlement and death rates.

* 1931 Census Monograph No. 13.

XVII.—CORRELATION OF INDICES OF AGE PHASES WITH (1) PERCENTAGE BORN IN PROVINCE OF RESIDENCE, (2) AGE OF SETTLEMENT AND (3) DEATH RATES, CANADA, MALES, 1931

Factor Denoted by X_1	Equation	Arithmetic Mean	Standard Deviation	Coefficient of Correlation	Standard Error of Fit
P.C. born in province of residence	$X_1 = 48{\cdot}2 + 2{\cdot}55X_2 - 7{\cdot}30X_3 + 9{\cdot}64X_4$	75·6	22·64	·90	9·96
Age of settlement (years)	$X_1 = 13{\cdot}8 + 0{\cdot}89X_2 - 2{\cdot}64X_3 + 5{\cdot}80X_4$	38·0	12·36	·88	5·97
Deaths per 1,000 population	$X_1 = 18{\cdot}0 + 0{\cdot}19X_2 - 1{\cdot}08X_3 + 1{\cdot}10X_4$	10·8	2·50	·68	1·84

Percentage Born in Province of Residence.—The equation found by fitting the age indices to percentage born in the province was $X_1 = 48{\cdot}2 + 2{\cdot}55X_2 - 7{\cdot}30X_3 + 9{\cdot}64X_4$; the coefficient of multiple correlation was R = ·90, a very significant correlation considering that 220 divisions were correlated.

Examining this equation it is seen that both the young and old ages vary directly and the standard age inversely as the percentage born in the province. This is in accordance with what we have already shown in the first part of the chapter, but contains additional information. The larger the old and young population, the smaller the middle or the immigrant population. But, also, it is important in its bearing upon indigenous and non-indigenous population whether this middle population be young or old. It is rather remarkable that the older the middle population (as indicated by "standard age") the smaller the percentage born in the province, other things being equal. Of course, other things are *not* equal. If the standard age varied as widely as the two percentages, then we should have in all cases the smallest indigenous population associated with an old middle-age type, but the standard age does not so vary. Its standard deviation (in the 220 counties or census divisions) is only 1·14 while that of the percentage under 25 is 6·21 and of the percentage 65 and over is 2·44. If we consider three standard deviations on each side of the mean as practically the outside limits of probable variation, it is just as likely that the percentage under 25 will be 18·63 above or below its mean and the percentage 65 and over will be 7·32 above or below its mean as that the standard age will be 3·42 above or below its mean. Supplying the weights shown in the equation, we have:—

				P.C. Born in Province
P.C. under 25	2·55	× 18·63	=	47·51
Standard age	−7·30	× 3·42	=	−24·97
P.C. 65 and over	9·64	× 7·32	=	70·56
				93·10

If we suppose all three are in any actual case at their limit above the mean, the negative weight of the standard age would have the effect of lowering the percentage born in the province only to the extent of one-fifth of the amount the other two would raise it above the mean. The means of the age indices are 51·4—22·5—6·3 while that of the percentage born in the province is 75·6. This shows how absurd it would be to expect that all three indices would be their full limit above the mean at the same time, as in that case 168·7 p.c. would be province born. However, if there were two counties where the percentages under 25 and 65 and over were the same but the standard age of the one greater than that of the other, *i.e.*, the middle group older than in the other, the latter would be expected to have a smaller percentage province born. Since the correlation is so high as to render this expectation very probable, the point is very intriguing. Why should an older middle-age group presuppose a smaller indigenous population? A plausible explanation can be given for this. The middle ages are very intimately connected with migration. Since the extreme variation of the standard age is only about 3½ years and the mean standard age is 22·5, *i.e.*, (added to 22·5) 45 years of age, the great part of this middle portion would be between 42 and 49 years of age. Furthermore, if 24 be set as the age of maximum migration, then those 42–49 in 1931 would be migrants from 1906 to 1913 and it is well known that this was the period of heaviest migration. Consequently, the higher standard age shows a larger element of migrants, the size of the middle age being the same. It would not be so if the standard age was capable of varying to the extent of going past the fifties or sixties.

Considering this, it is remarkable that the emigrant type (Class II) should show the largest proportion indigenous, since a defect at the ages of migration would raise the standard age. An explanation of this will be rendered easier by taking the classic case of Inverness, N.S., which has already been discussed and charted (see Chart 5, page 768). Here the indices are 54·2—24·7—9·2 with a percentage born in the province of 96·5 as compared with the average for all counties of 51·4—22·5—6·3 and the percentage born in the province, 75·6. The differences between the two sets of indices are 2·8—2·2—2·9 and between the percentages born in the province, 20·9. The difference of the percentages born in the province as calculated by the weights in the equation is 19·1 so that the fit is very close and Inverness is true to type. The standard age is high because of the shortage of young people in the middle ages. There are in all only 26·6 p.c. in the middle ages as compared with 42·3 p.c. in the average of all counties.

It is clear that the reason Inverness is so highly indigenous is because there is such a small middle age and this in spite of its advanced standard age. The average middle-age proportion of all Class II types is 37·4 p.c. as compared with 42·3 p.c. for all counties. In spite of the high standard age of this class the indigenous population is large because the middle age actually is smaller than in the other types.

The higher standard ages of this class, then, serve to prevent the full connection of the emigration type with indigenous population from becoming manifest. This should have been remedied by subdividing the class into IIA and IIB but there were only 6 of the IIA's*; in other words, all of the class had high standard ages. However, all this makes it clear that the younger the middle age the more indigenous element is found in it, providing the numbers at the middle ages remain the same. It all seems to hark back to the fact that the period of heavy emigration was at the beginning of the century and that the migrants would by 1931 be part of the average standard age.

Age of Settlement.—The manner of calculating the age of settlement has already been explained. The equation correlating this with the age indices has the same form as the previous one, *viz.*, $X_1 = a + bX_2 + cX_3 + dX_4$, where X_1 = age of settlement and the other variables the age indices as before. The fitted equation was $X_1 = 13·8 + 0·89X_2 - 2·64X_3 + 5·80X_4$. The correlation coefficient was R = ·88, again so high that we need have no hesitation in commenting upon the relationship.

It is again noticeable that the two indices measuring the proportions of the population have positive weights while the standard age has a negative weight. Again, it is obvious that the middle-age population is associated with migrations. The negative weight of the standard age is more difficult to explain than before. Taking the limit of possible variation as before, we would find the three indices causing variations for the means as follows:—

				Age of Settlement
P.C. under 25	0·89	×	18·63	= 16·58
Standard age	−2·64	×	3·42	= −9·03
P.C. 65 and over	5·80	×	7·32	= 42·46
				50·01

The percentage 65 and over naturally is even more effective in relation to the other two in this equation than in the case of the previous one. The explanation of the negative weight of the standard age must be the same as before, *viz.*, the heavy period of emigration occurring at the beginning of the century.

Death Rates.—The equation correlating death rates with the age indices was in the same form and fitted as follows: X_1 (death rate) = 18·0 + 0·19X_2 − 1·08X_3 + 1·10X_4. The correlation was R = ·68.

We have, thus, the same phenomena as before. The effective weights are:—

				Deaths per 1,000 Population
P.C. under 25	0·19	×	18·63	= 3·54
Standard age	−1·08	×	3·42	= −3·69
P.C. 65 and over	1·10	×	7·32	= 8·05
				7·90

* See Statement II, Chapter II.

The standard age is much more effective than in the case of the other two correlations. The higher the standard age and the larger the middle group the smaller the death rates. This seems to confirm the explanation of the behaviour of the standard age as being connected with the actual period at which the heavy emigration took place. No other explanation is reasonable. We may suggest another explanation, only to dismiss it, *viz.*, that an older middle age goes with a lower death rate because in the case of higher death rates the age has been worn down by death, *i.e.*, the middle group is older *because* the death rate is lower, not the converse. If this were so, surely the same would be true of the older group—those 65 years and over.

Inter-relation of Correlations.—It is remarkable that in the case of all three correlations with age index—percentage born in the province, age of settlement and death rate—a simple correlation with standard age has a positive sign. It is only the partial correlation that has the negative sign. This means that, for example, if we correlate standard age with death rate and ignore the other age indices, the higher the standard age the higher the death rate, but when the other two indices are kept constant, the higher the standard age the lower the death rate. The reason for this is that in actual cases a high standard age is associated with old age and as such with high death rate, but in the rare case that a high standard age is not so associated, the death rate, *ipso facto*, is low when the standard age is high. In counties with equally large middle-age populations, the older this middle-age population is, the lower the death rate. Such counties are found in the parts of Canada settled at the beginning of the century.

The connection of the standard age with death, then, is the result of an accident of association. The higher standard ages are associated with older migrant populations, other things being equal. We can come very near to proving this. For the purpose a multiple correlation was taken between (1) death rate, (2) age index, (3) percentage born in the province of residence. To obtain a single age index for this a new one had to be devised, *viz.*, the percentage born in the province as calculated from the three age indices. This is really an age index, not a percentage-born-in-the-province index. When the death rate was correlated with the two, the correlation was R = ·78 but the age index had very little weight while the percentage born in the province had practically all the weight. That is, the only reason why the death rate correlated with the age index was because of the association of both with the percentage born in the province. This means that the migrant populations are correlating with low death rates *per se*, not because of their age distribution. In other words, the migrant populations are the condition of the age distribution and also the condition of low death rates; therefore, a certain age distribution is associated with low death rates. This is the only logical explanation that can be given of the fact that a high standard age indicates a low death rate and it seems to be confirmed by findings which are entered into in detail in *Canadian Life Tables, 1931.**

This, of course, does not alter the importance of the correlation between the age index and death rates. It merely gives it meaning. It was obvious at the outset that age distribution was the effect of certain causes. The peculiar age distribution of Canada is caused by migration—immigration and emigration. The part that is normal or fundamental in the age structure is caused by births and deaths. At present, however, the migrant cause is uppermost. A migrant population means a moving or mobile population. They are migrants because they have moved. We have two classes of age types in counties; the one caused by moving out, *i.e.*, the result of the *loss* of a moving population (Class II); the other, by moving in, *i.e.*, the result of the *gain* of a moving population (Class III). These two classes show opposite extremes of death rates. The normally ageing population (independent of migration) behaves as might be expected towards death rates. A large population at very young or very old ages means high death rates; a large population at intermediate ages means low death rates. These extremes, however, would be under 5 and over 50. A large population from 8 to 15 would be more important for a low death rate than one from 25 to 33. There would be no question that a large proportion of these extremes would correlate with larger death rates but this would be telling us only what we know without testing. The age indices actually used are those which test a migrant versus a static population. A condition which gains or loses for Canada population at the most mobile period of life has an important bearing upon its death rate. Since up to this time any part of Canada which shows a stationary or decreasing population shows this because of emigration, it is significant if these parts show higher death rates than the others. Already it has been shown that Class II (the emigrant class) counties show stationary or decreasing populations and that this class also

* 1931 Census Monograph No. 13.

shows the highest death rates. They are in the oldest settled districts because the age of settlement was measured by the size of the population at each past census and a decreasing population would thereby show an older population; they contain the highest percentage province-born because people were moving out, not in. In a given area the two, immigration and emigration, do not usually go together. They have the highest death rate because they have lost their mobile population. All this lends tremendous significance to the correlation between the age indices and these functions. The age structure is here regarded as not necessarily the cause of certain functions but the barometer of symptom, and it would seem to be a very sensitive barometer. We could multiply the functions with which it correlates but this is left for others or later studies. It could safely be predicted, however, that the threefold index as it stands is sensitive mainly to such symptoms as have to do with static and mobile populations, the sensitiveness to such things as death rates being merely a secondary product dependent on static or mobile conditions.

Unusual Types Brought Out by Correlations.—It is always of interest in studying correlations to know what members of the series do not conform to type and why. In this case we shall take the correlation between the age indices and the percentage born in the province. This is regarded as the most significant correlation not only because it shows the highest coefficient but also because we believe it is the fundamental correlation, the other two correlating with age largely because of their association with this attribute. As a measure of non-conformity we take it that areas which are more than three times the standard error of fit* are out of the field of this correlation. There is only one area in this category. We can also take such areas as are almost out of the field (two to three times the standard error of fit).

XVIII.—COUNTIES WITH VARIATION BETWEEN ACTUAL AND EXPECTED PERCENTAGE BORN IN PROVINCE OF RESIDENCE (A) THREE TIMES STANDARD ERROR OF FIT, (B) TWICE STANDARD ERROR OF FIT, SHOWING THREEFOLD AGE INDEX AND AGE TYPE, 1931

County or Census Division	P.C. Born in Province of Residence	Threefold Age Index	Type	P C. Born in Province of Residence (calculated on basis of correlation with age index)
(a) Three times standard error of fit or 30 p.c. (out of field)—				
Hants, N.S.	94·2	52·2 — 19·5 — 8·9	IIA	124·7
(b) Twice standard error of fit (20-30 p.c.)—				
Addington, Ont.	93·5	46·6 — 23·7 — 12·6	IVB	115·3
Montreal Island, Que.	74·9	48·2 — 21·0 — 3·7	IIIA	53·4
Division No. 14, Man.	58·1	55·5 — 22·2 — 5·3	IA	78·6
Division No. 15, Man.	46·6	54·0 — 22·6 — 4·8	IB	67·0
Division No. 5, Sask.	53·7	53·5 — 21·9 — 5·1	IA	73·8
Division No. 9, Sask.	54·7	57·7 — 21·7 — 4·2	IA	77·3
Division No. 15, Sask.	51·7	55·7 — 21·0 — 3·8	IA	73·4
Division No. 10, Alta.	48·0	55·2 — 21·2 — 3·8	IA	70·6
Division No. 9, B.C.	35·5	33·0 — 22·8 — 4·5	IIIB	9·3

In the case of three of these, Hants, N.S., Addington, Ont. and Division No. 9, B.C., the explanation is obvious; they are merely cases of non-linearity, *i.e.*, so extreme that no prediction is possible for them. Such occur in practically all calculations and there is nothing more that can be said about them. Hants has a most peculiar age distribution, the standard age being remarkably low. Its age distribution is so remarkable that it seems worth while charting (see Chart 8). In the case of the three Saskatchewan divisions the situation is different. They have a large youthful population despite the fact that they are immigrant areas. Such areas have already been commented on, *viz.*, those where the immigrant population, coming in as single adult males, married and a huge birth rate followed; also, where they came accompanied by children. As evidence of this it may be mentioned that in Division No. 9, Sask., only 9·5 p.c. of the male population had both parents Canadian-born; in Division No. 5 only 18·8 p.c. and in Division No. 15 only 21·9 p.c. as compared with 23·3 p.c. in the province as a whole. Again, in the province as a whole, 20·5 p.c. of the males under 25 were born outside the province. This age group being so high in the three divisions mentioned is what causes the high prediction for

* Standard error of fit $= \sigma \sqrt{1 - R^2}$.

percentage born in the province. The correlation is based upon the natural tendency for the younger group to be born in the province. As seen in the last chapter the divisions with a large population under 25 and small populations at the middle and older ages are placed in Class IA. Most of the divisions of the Prairie Provinces belong to Class III, *i.e.*, with a large proportion at the middle ages. Now, every census division of Saskatchewan belonging to Class IA was overestimated for percentage born in the province calculated on the basis of the correlation. There is no doubt that this was due to the fact that those at the younger ages in these census divisions contained a considerable proportion of migrants while in Canada as a whole they did not; furthermore, this is evidence that the immigrants of these divisions had arrived recently. This is a further explanation of the manner in which the standard age correlates negatively with percentage born in the province.

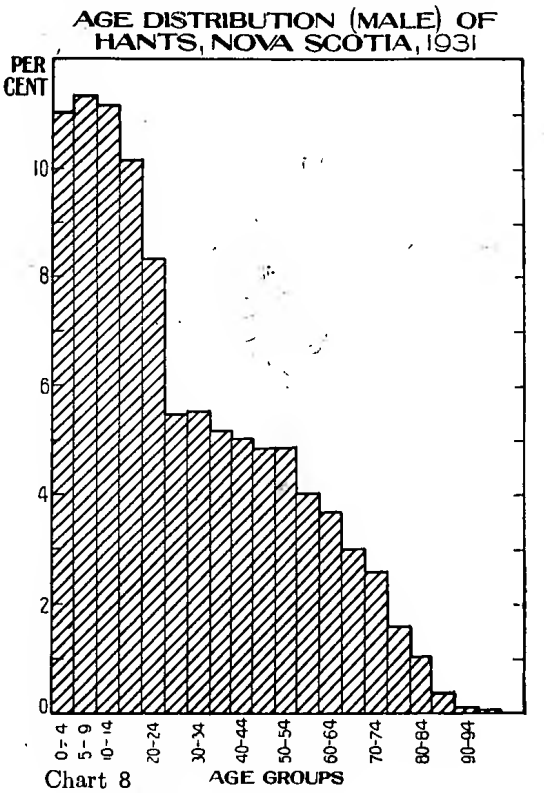


Chart 8

Conclusion.—Now that the significance of these correlations has been indicated, a classification of the areas of Canada (counties and census divisions) in 1931 is shown in Maps II, III and IV. As already mentioned, the percentage born in the province, the average age of settlement and the resident death rates, as calculated on the basis of the correlation between these and the threefold index of age, are really age indices, *e.g.*, a percentage born in the province as calculated from the equation $X_1 = 48{\cdot}2 + 2{\cdot}55X_2 - 7{\cdot}30X_3 + 9{\cdot}64X_4$, where X_1 = percentage born in the province, X_2 = percentage under 25, X_3 = standard age and X_4 = percentage 65 and over, is obviously an age classification, not a percentage-born-in-the-province classification. The province born so derived follow the order of the age structure because they are calculated on the basis of this structure. The calculated figures are of the same dimensions as the actual percentage born in the province and come very close to them merely because the correlation is so high, but none the less they are age calculations. If a person works three days at about five dollars a day he gets about fifteen dollars. This fifteen dollars is really a time figure although it has the form and dimensions of a money figure. It correlates perfectly with the days worked but not with the amount of money actually received since one condition is "about" five dollars a day. Similarly, our classification correlates perfectly with the age structure but only ·90 with the percentage born in the province. Consequently, it progresses with the age structure—is, in fact, an age structure—but the percentage born in the province not only gives this structure a meaning but also enables us to arrange the areas quantitatively according to a *single* index. We could not do so according to a threefold index.

CHAPTER IV

CLASSIFICATION OF URBAN LOCALITIES BY PECULIARITIES IN AGE STRUCTURE

There is no doubt that peculiarities in the age type of any locality are associated with some event or events in the history of that locality. It may be heavy emigration or immigration at certain dates; it may be the influence of this migration upon the birth rate of subsequent dates; it may be a rise or fall in the birth rate for some other reason; but there is no doubt that such irregularities or peculiarities are significant. The reason we do not mention death rates is because it is not probable that changes in death rate in any locality were ever sufficient to cause changes in the age structure. Irregularities are more likely to occur in urban localities than in rural. On the whole, rural localities in Canada have gone through a process of steady drainage and this has occurred at certain ages so that the effect on their age distribution has been to give them a sort of rural age type more or less regular—except, of course, such rural localities in the newer parts of Canada as have received instead of lost migrants. The populations of urban localities in Canada are likely to be of age types similar to rural parts receiving migrants—more irregular because the growth of any urban centre is more or less spasmodic. Unfortunately we are not able to measure the amount of immigration to an urban centre since all we know from the census of the number of migrants in any locality is derived from two sources of information: (1) the number of immigrants in that locality; (2) the number of persons born in some other province of Canada than that in which the locality is situated. We do not know the number of persons in a certain urban locality who were born in the province in which it is situated but were not born in the locality itself, and this number probably constitutes the greater part of the adults and some of the children of some of these localities.

Types of Irregularities.—Accordingly, an attempt was made to classify the irregularities in age structure of cities with populations of 5,000 or more. In the first place, the irregularities may be divided into two main types: (1) an irregularity affecting the whole age structure—what may be termed a regular irregularity—and (2) localized irregularities, affecting a specific portion of the age structure. Thus the normal age distribution is a maximum number in the first age group with a diminishing number at each successive quinquennium. If instead of the maximum occurring in the first age group it occurs in the second (5–9 years of age), then we have the type peculiar to Canada as a whole in 1931. Probably the reason for this type was not necessarily a genuine decline in the birth rate in 1926-31 but a decline from what was probably an abnormally high birth rate in 1921-26. This is mentioned because it is probable that too much importance has been attached to this defect in the number at 0–4. It is also probable that the numbers at 5–9 are overstated and those at 0–4 are understated. However, it will appear in Table 3, Part II, page 810, that there are only some places that conform to this type. Maxima are occurring at other points as well. The relative number of cities of 5,000 or more with maximum at different points are given in Statement XIX as follows:—

XIX.—FREQUENCY DISTRIBUTION OF CITIES OF 5,000 POPULATION AND OVER ACCORDING TO AGE GROUP CONTAINING THE MODE, FOR (A) TOTAL POPULATION, (B) MALE POPULATION AND (C) FEMALE POPULATION, 1931

Age Group Containing the Mode	Distribution of Cities		
	Total Population	Male Population	Female Population
0- 4	11	12	10
5- 9	30	30	18
10-14	5	15	5
15-19	26	14	34
20-24	9	4	16
25-29	1	3	-
30-34	-	-	-
35-39	-	-	-
40-44	1	1	-
45-49	-	4	-
Total	83	83 [1]	83

[1] Male population of Grand'Mère, Que., at age groups 5-9 and 10-14 the same; entered in group 5-9.

It is seen that while the 5–9 maximum—the type of Canada as a whole—is the most common, it is not much more common than the 15–19 maximum. If we look at it from the point of view of the date of birth and remember that the 5–9's are those born in 1921-26, a period of high birth rates, and that the 15–19's are those born in 1911-16, we can see that in all probability the causes of the two maxima are quite different. The 5–9's are probably largely due to a decline in birth rate in 1926-31 (as compared with 1921-26) but the 15–19's are probably due to migration. In the case of females especially, this and the following age group are the ones in which they move in greatest numbers into cities. We find that this age group (20–24) is also largely represented among the females. One of the most striking characteristics of these irregularities is the difference between those for males and those for females. We find the males distributed over more age groups and the modal representation in age groups different from that of the females. The modal representation for males is at 5–9; for females at 15–19. Thus these differences in age types portray real differences in the manner of movement as between the two sexes. There is another point which is suggestive. Were we to look at the age distribution only from the point of view of both sexes combined we would be apt to conclude that the modal maximum for the cities and the type for Canada as a whole (age 5–9) was due entirely to decline in birth rate. This conclusion breaks down, however, on observing that the mode is at 15–19 in the case of females and that the 5–9's are only slightly more represented than the 20–24's. Consequently, we have to look for some explanation in addition to declining birth rate for the typical age structure of Canada as a whole in 1931 (*viz.*, a maximum at 5–9).

Secondary Peaks.—Before drawing any conclusion, let us examine the irregularities more thoroughly. When we say, for example, that the age group 5–9 is the largest quinquennial group of the population we mean that it is larger than any other single quinquennial group, not that there is a steady progression from this age on of diminishing groups. The truth is that there are, or may be, several modal groups in the age range of which the 5–9 is the chief. We cannot ignore minor peaks in the age structure. Thus if the modal age group was 20–24 but at the same time there was a minor peak at 5–9, then this would indicate a tendency for the 5–9's to strive for the position of modal group. Accordingly, we give below Statement XX similar to Statement XIX except that we include the minor peaks as well as the modal group.

XX.—FREQUENCY DISTRIBUTION OF CITIES OF 5,000 POPULATION AND OVER ACCORDING TO AGE GROUPS CONTAINING THE MODE AND SECONDARY PEAKS, FOR (A) TOTAL POPULATION, (B) MALE POPULATION AND (C) FEMALE POPULATION, 1931

Age Group Containing Mode or Peak	Distribution of Cities		
	Total Population	Male Population	Female Population
0– 4	12	15	11
5– 9	41	37	31
10–14	5	18	5
15–19	40	28	48
20–24	20	10	26
25–29	8	20	6
30–34	5	16	9
35–39	38	27	34
40–44	25	26	16
45–49	21	19	6
50–54	–	–	1
55–59	–	–	–
60–64	–	–	1
Total[1]	215	216	194

[1] Including duplicates since one city might have two or more peaks.

It is seen from Statement XX that the observations on female as compared with male city-ward movements are emphasized still more when the secondary peaks are included; however, it is also seen that the secondary peaks bring the female more in line with the male and the average for Canada than was manifested when the modal group alone was shown. At the same time, the comparison of the group 5–9 in the case of both sexes as compared with the same group when the sexes are shown separately convinces us that the fall in the birth rate between 1926 and 1931 was not sufficient to explain why 5–9 was the modal age for Canada as a whole—in other words,

while 5–9 was the *largest* group for Canada as a whole it was not the *typical* group and we would expect a typical group if the cause was such a single or simple one as decreasing birth rate. It certainly was not the typical group for cities. The groups 15–19 and 35–39 in the case of males and 15–19, 20–24 and 35–39 in the case of females had claims just as strong as the 5–9 group. About 60 p.c. of the males and over 70 p.c. of the females were concentrated in modes between 15–19 and 40–44. Movement was clearly more important than birth rate in determining age distribution. We gather from this that fine conclusions on vital statistics from age distribution are, to say the least, dangerous.

Single-Mode Cities.—Now it would seem reasonable to expect that such cities as show a simple age type, *i.e.* a single modal group undisturbed by minor modes, should have had a less disturbed history than the remaining cities, no matter at what age this single mode occurred. We may classify these cities as pure types.

XXI.—CITIES OF 5,000 POPULATION AND OVER HAVING A SINGLE MODAL AGE GROUP, BY AGE GROUP AT WHICH THIS MODE OCCURS, FOR (A) MALE POPULATION, (B) FEMALE POPULATION, 1931

Age Group Containing the Mode	Single-Mode Cities
(A) MALE POPULATION	
0– 4	Cap-de-la-Madeleine, Chicoutimi, Joliette, Quebec, Thetford Mines
5– 9	Grand'Mère, Rivière-du-Loup
10–14	Lévis
15–19	St-Hyacinthe
(B) FEMALE POPULATION	
0– 4	Chicoutimi, Shawinigan Falls, Thetford Mines
5– 9	Cap-de-la-Madeleine, Grand'Mère, Hull
10–14	Lachine, Sault Ste. Marie, Welland
15–19	Galt, Ottawa, Weyburn
20–24	Outremont, Westmount

Statement XXII shows the combined population for each of the groups of Statement XXI, by quinquennial age groups.

XXII.—POPULATION OF SINGLE-MODE CITIES OF 5,000 POPULATION AND OVER ARRANGED IN CLASSES ACCORDING TO THE AGE GROUP CONTAINING THE MODE, BY QUINQUENNIAL AGE GROUPS, FOR (A) MALE POPULATION, (B) FEMALE POPULATION, 1931

Age Group	Modal Quinquennial Group								
	Male Population				Female Population				
	0–4	5–9	10–14	15–19	0–4	5–9	10–14	15–19	20–24
All ages	82,085	7,206	5,769	6,087	18,908	22,379	25,781	77,258	30,283
0– 4	10,997	862	659	598	2,999	2,971	2,613	5,889	1,248
5– 9	10,503	1,021	788	624	2,742	3,203	2,836	6,475	1,708
10–14	8,830	1,013	882	627	2,273	2,821	2,899	6,632	2,080
15–19	8,147	759	596	856	2,086	2,491	2,846	7,874	3,091
20–24	7,564	588	476	553	1,855	1,940	2,430	7,623	4,171
25–29	6,620	427	397	474	1,567	1,579	1,978	6,508	3,050
30–34	5,594	401	369	363	1,266	1,519	1,875	6,103	2,587
35–39	5,049	409	307	306	996	1,371	1,758	5,889	2,448
40–44	4,365	362	247	311	752	1,148	1,696	5,139	2,234
45–49	3,644	340	247	296	650	932	1,323	4,575	2,048
50–54	3,125	286	215	272	520	696	1,075	3,884	1,632
55–59	2,364	239	177	195	390	534	772	3,059	1,244
60–64	1,792	176	114	167	332	399	617	2,496	1,008
65–69	1,388	110	95	154	219	305	451	1,997	713
70–74	1,062	116	95	120	130	250	332	1,514	473
75–79	609	59	61	87	76	135	162	915	316
80–84	297	23	35	66	34	54	82	441	151
85–89	107	11	5	14	18	23	26	177	66
90–94	24	2	3	3	2	8	8	51	14
95–99	4	2	1	1	1	–	2	16	1
100 and over	–	–	–	–	–	–	–	1	–

Sample for Analysis.—It is obviously impossible to examine separately every one of the 83 cities of 5,000 or more population with a view to ascertaining the reasons for their particular type of age irregularity. If, however, we take several cities and find an explanation for each one, it would seem sufficient. By taking the largest cities, we can procure more reliable results because of the weight of large numbers. Consequently, we select for special examination the following:—

Toronto,	maximum	population	at	20–24,	peak at	5– 9 and 35–39;
Winnipeg,	"	"	"	15–19,	"	" 35–49;
Ottawa,	"	"	"	15–19,	"	" 5– 9, small peak at 35–44;
Hamilton,	"	"	"	5– 9,	"	" 15–19;
Quebec,	"	"	"	0– 4,	"	" 15–24;
Windsor,	"	"	"	5– 9,	"	" 25-39;
Halifax,	"	"	"	20–24,	"	" 5– 9;
Victoria,	"	"	"	15–19,	"	" 30–59.

Method of Analysis.—The only way to examine these is to compare their age distribution census by census, beginning with the last one, to see how and when these peaks came about.

If we take the cities in order and submit them severally to the same kind of treatment, we may be able to ascertain how they have arrived at their peculiar type of age distribution. The method of examination is to take the population of 1911, 1921 and 1931 (no good purpose is served by going back further) by quinquennial age groups. From expectations based upon the *Canadian Life Tables, 1931*, the numbers at each of these censuses expected to survive (at the appropriate age) until the next census are calculated.* The excess over the expected survivors in, say, 1921 from the population of 1911 is, in the actual population of 1921, approximately the number coming in from points outside the city during the decade, less, of course, the number moving out in the decade. No doubt some allowance should be made for mis-statement of age, but this cannot be done and further, it will be seen, the movements occur at ages where mis-statements are usually not prevalent, especially such mis-statements as are not ironed out by the use of the quinquennial group (instead of single years). Chart 9 shows for each city the actual population, 1921 and 1931 as compared with the expected, the differences giving a picture of the volume of the in-movement and of its affect upon the age structure. Also, in Statement XXIV the second differences of the age groups of each city are summed for: (1) population in 1911; (2) survivors of this population (at appropriate ages) in 1921; (3) population in 1921; (4) survivors of these in 1931; (5) population in 1931. It is desired to show by this means the comparative effects of death and of in-movement upon the smoothness of the age structure. The difference in the smoothness of the population of 1911 and its survivors in 1921 is caused by death and ageing; the difference between the survivors for 1911 and 1921 and the actual population of 1921 is caused by in- and out-movements. The second difference† is used because it is rather a good criterion of smoothness. If the age distribution were perfectly linear there would be no second difference. Although it is not expected to be linear, the arithmetic sum of the second difference as a percentage of the total population examined should furnish a basis of comparison that will enable us to see whether the effect of the various processes is to make the age structure more or less smooth.

* Although the survival expectations change as time goes on, it was considered that the one life table would be sufficient since the changes in survival rates would only mean small numbers which would not materially affect the general picture it is desired to show here.

† See Statement XXIV.

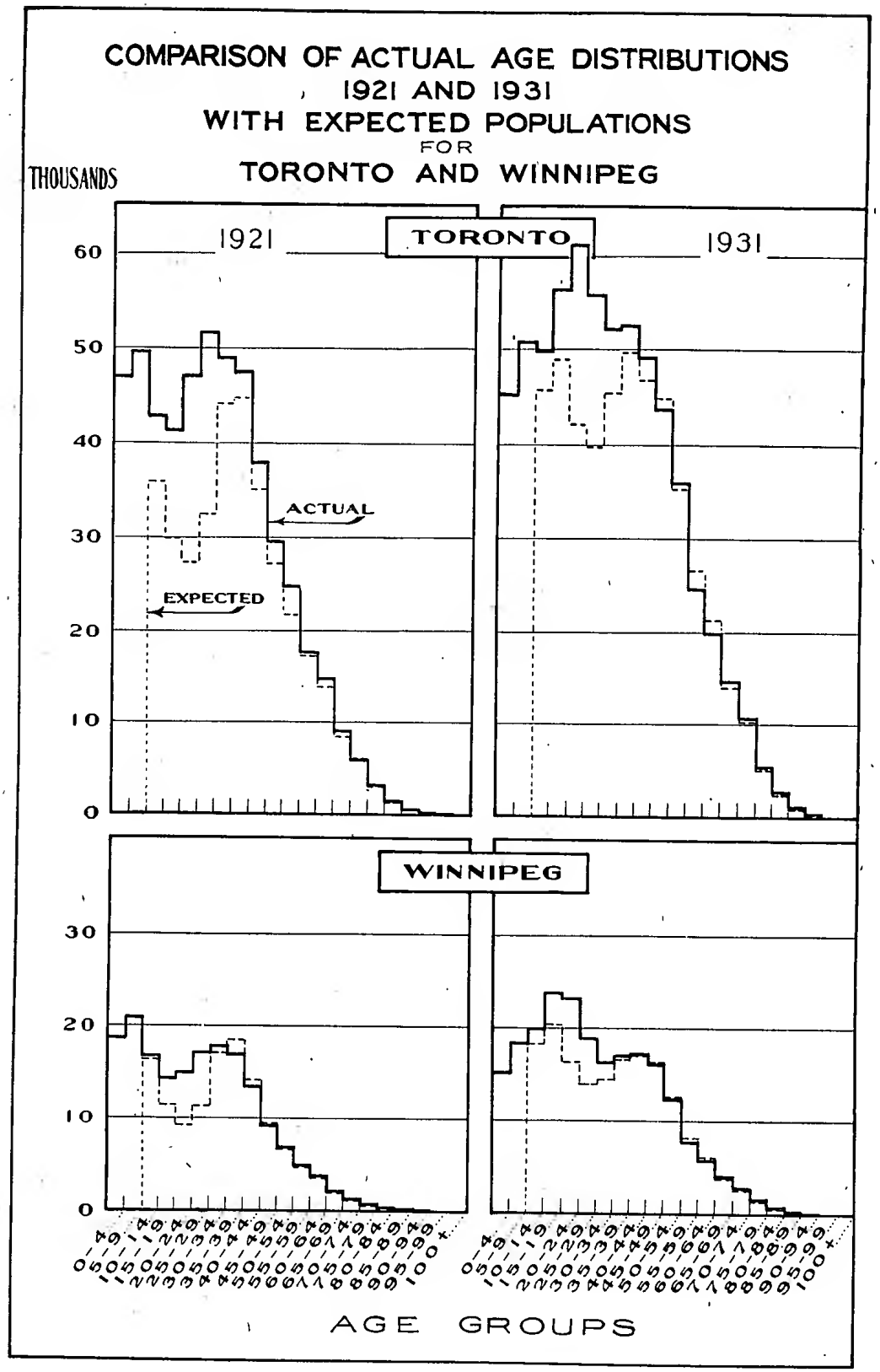

COMPARISON OF ACTUAL AGE DISTRIBUTIONS
1921 AND 1931
WITH EXPECTED POPULATIONS
FOR
TORONTO AND WINNIPEG
THOUSANDS
TORONTO
1921
1931
60
50
40
30
20
10
0
ACTUAL
EXPECTED
WINNIPEG
30
20
10
0
AGE GROUPS

Chart 9

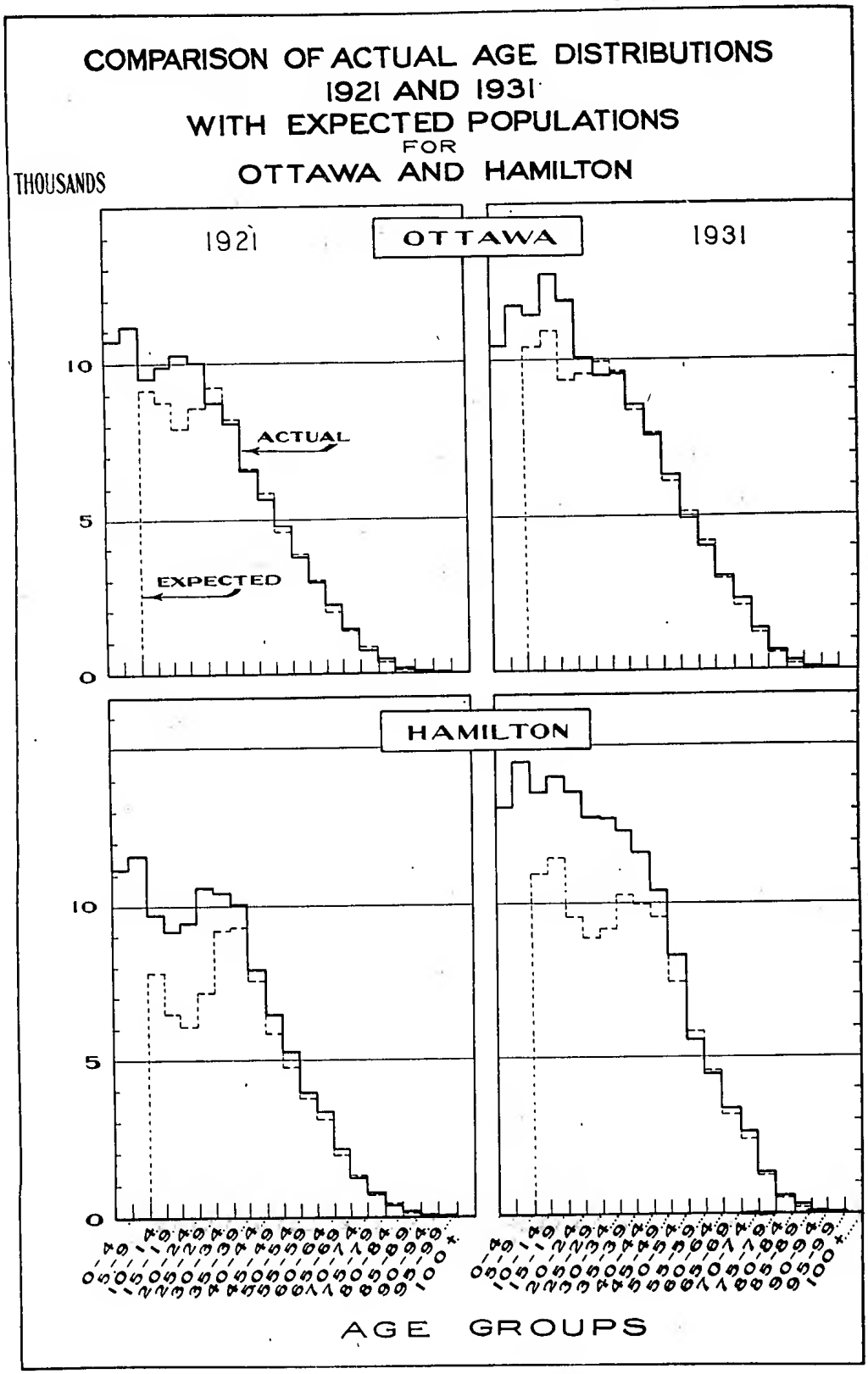

COMPARISON OF ACTUAL AGE DISTRIBUTIONS
1921 AND 1931
WITH EXPECTED POPULATIONS
FOR
OTTAWA AND HAMILTON
THOUSANDS
OTTAWA
1921
1931
ACTUAL
EXPECTED
10
5
0
HAMILTON
10
5
0
AGE GROUPS

Chart 9—Con.

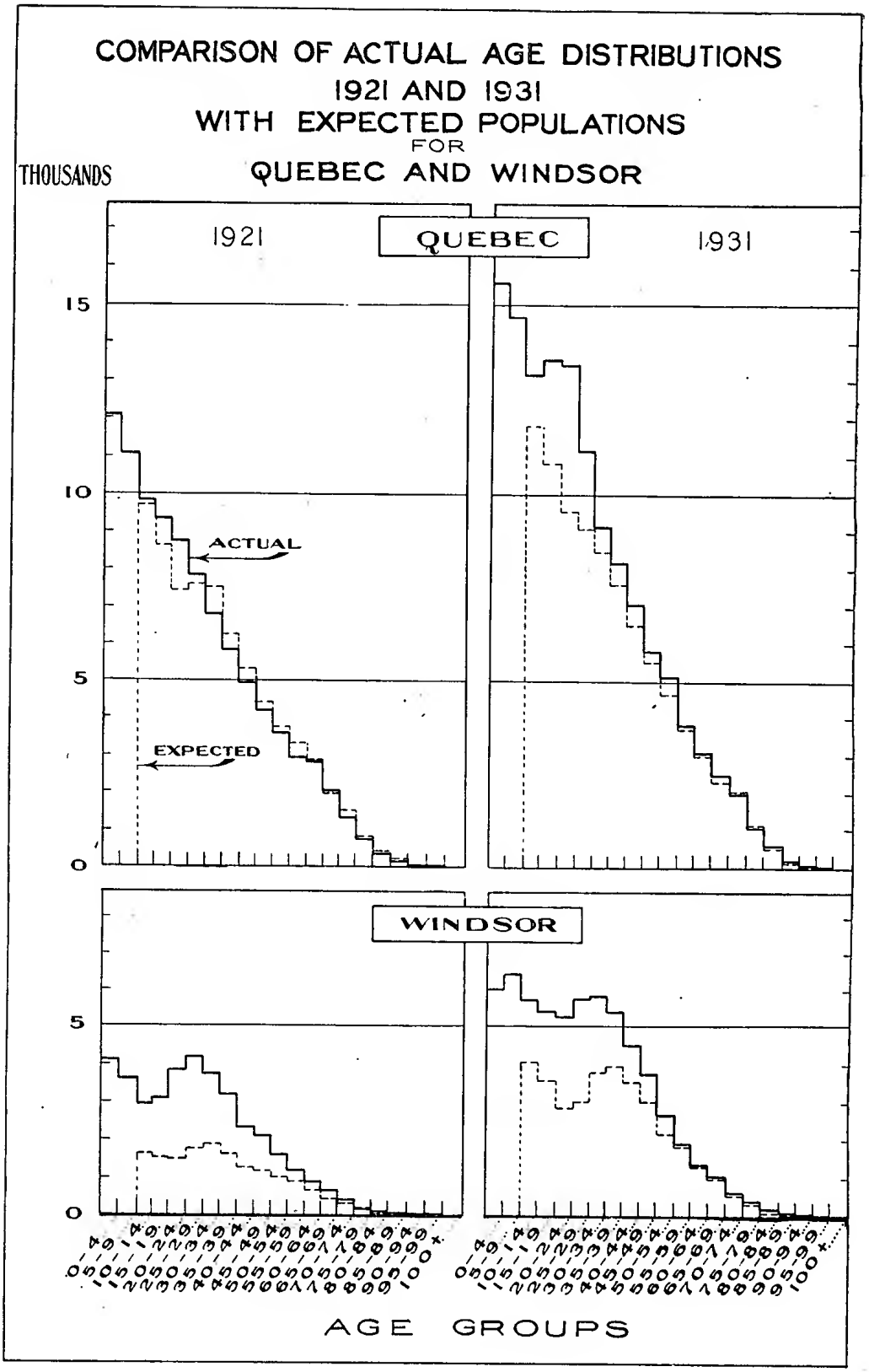

COMPARISON OF ACTUAL AGE DISTRIBUTIONS
1921 AND 1931
WITH EXPECTED POPULATIONS
FOR
QUEBEC AND WINDSOR
THOUSANDS
1921
QUEBEC
1931
15
10
5
0
ACTUAL
EXPECTED
WINDSOR
5
0
AGE GROUPS

Chart 9—Con.

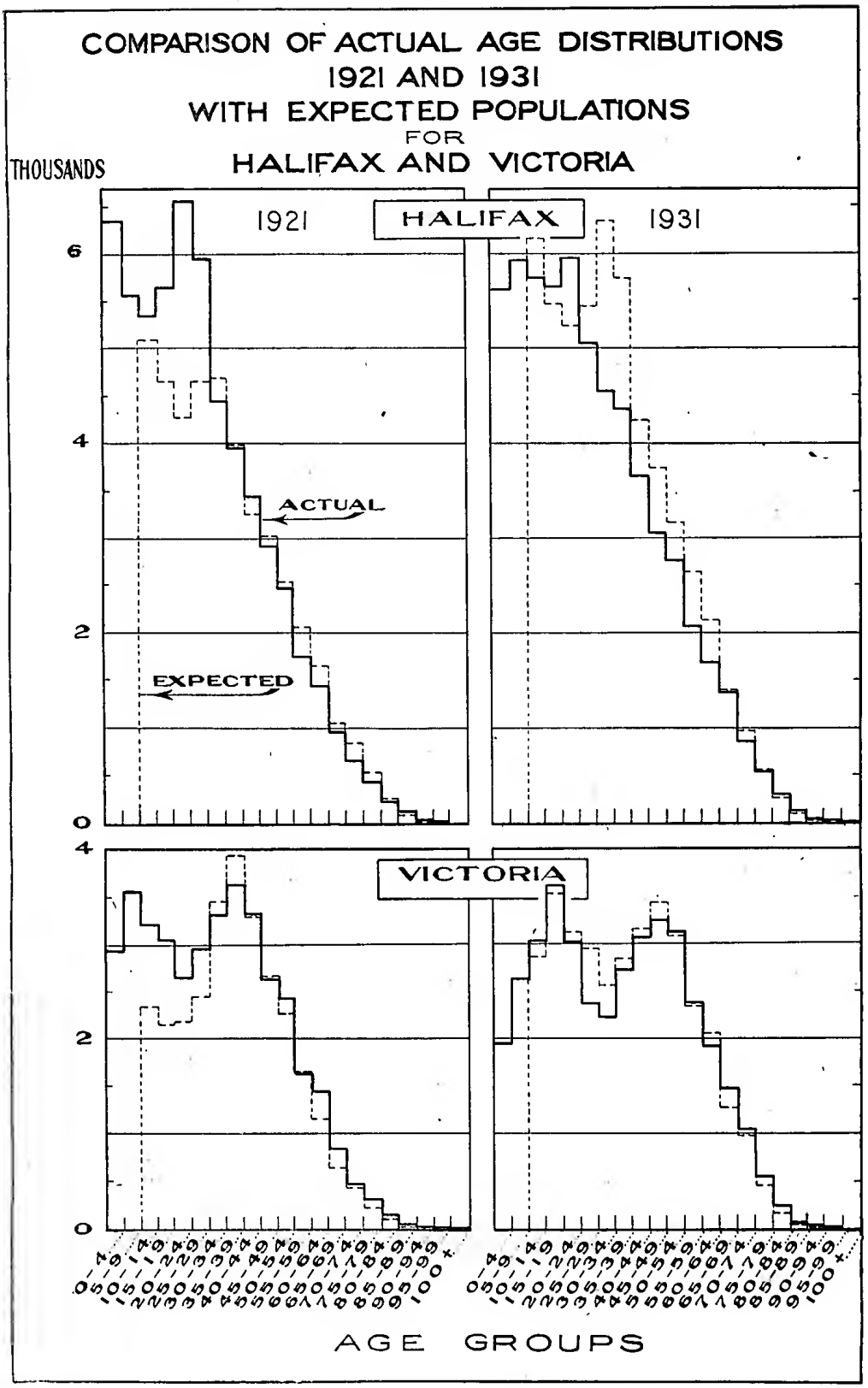

COMPARISON OF ACTUAL AGE DISTRIBUTIONS
1921 AND 1931
WITH EXPECTED POPULATIONS
FOR
HALIFAX AND VICTORIA
THOUSANDS
1921
HALIFAX
1931
6
4
2
0
ACTUAL
EXPECTED
4
VICTORIA
2
0
AGE GROUPS

Chart 9—Con.

Since only one set of rates of survival is used for all the cities and since, of course, differences are certain to exist between the survival rate of one city and another, it should follow, as a rule, that small differences in the charts and tables must be ignored. It is also probable that part of the differences between the actual population at a certain age and the survivors at that age from a previous census is due to mis-statement of age, *i.e.*, the person giving his or her age as less or greater than it really is. However, large differences are, without doubt, significant of movements and should be so regarded.

Statement XXIII shows the total population (of stated age) of each city for the census years 1911 and 1921, their survivors ten years later and the population in 1931. Statement XXIV shows the sums of the second differences of these populations and their survivors and also gives these sums as percentages of the population 10 years of age and over.

XXIII.—EIGHT SELECTED CITIES SHOWING TOTAL POPULATION OF EACH, 1911, 1921 AND 1931 AND SURVIVORS 10 YEARS LATER OF 1911 AND 1921 POPULATIONS

City	Actual Population, 1911[1]	Survivors in 1921 of 1911 Population	Actual Population, 1921[1]	Survivors in 1931 of 1921 Population	Actual Population, 1931[1]
Toronto	375,684	348,248	520,991	479,313	630,952
Winnipeg	134,060	126,527	178,834	166,961	218,720
Ottawa	86,917	80,362	107,383	98,458	126,824
Hamilton	81,919	75,556	114,041	104,779	155,516
Quebec	78,588	71,988	94,995	87,107	130,543
Windsor	17,787	16,354	38,540	35,711	63,094
Halifax	46,468	42,648	58,277	53,680	59,251
Victoria	31,367	29,063	38,686	35,140	38,766

[1] Stated age only.

XXIV.—SUM OF SECOND DIFFERENCES BETWEEN THE NUMBERS AT SUCCESSIVE QUINQUENNIAL AGES OF ACTUAL POPULATIONS 1911, 1921 AND 1931 AND SURVIVORS OF THESE POPULATIONS IN 1921 AND 1931, AND THESE SUMS AS PERCENTAGES OF POPULATION 10 YEARS OF AGE AND OVER

City	Sum of Second Differences					Second Differences as P.C. of Population 10 Years and over				
	Actual Population, 1911	Survivors in 1921 of 1911 Population	Actual Population, 1921	Survivors in 1931 of 1921 Population	Actual Population, 1931	Actual Population, 1911	Survivors in 1921 of 1911 Population	Actual Population, 1921	Survivors in 1931 of 1921 Population	Actual Population, 1931
Toronto	44,343	52,246	45,576	61,278	43,189	14·4	15·0	10·7	12·8	8·1
Winnipeg	20,947	26,814	15,788	22,930	21,898	19·8	21·2	11·3	13·7	11·8
Ottawa	6,423	7,825	5,196	9,217	8,035	9·4	9·7	6·1	9·4	7·7
Hamilton	7,545	9,667	8,255	11,290	8,484	11·2	12·8	9·1	10·8	6·6
Quebec	4,571	5,324	3,049	3,599	7,247	7·6	7·4[1]	4·2	4·1[1]	7·2[2]
Windsor	1,691	1,879	3,675	4,539	3,554	11·7	11·5[1]	12·0[2]	12·7	7·0
Halifax	3,245	3,771	5,636	6,209	4,844	8·9	8·8[1]	12·2[2]	11·6[1]	10·2
Victoria	3,953	4,109	4,507	5,210	4,456	14·8	14·1[1]	14·0	14·8	13·0
Unweighted mean	.....	.....	.....	.....	.....	12·2	12·6	10·0	11·2	9·0

[1] More smooth than expected.
[2] Less smooth than expected.

Effects on Age Structure of Movement, Death and Ageing.—Chart 9 and Statements XXIII and XXIV show so many features that considerable comment is required. Probably the best method of approach is to take the unweighted means at the foot of Statement XXIV as giving a general picture. Here we see that the general effect of death and ageing in the ten years is to make the age distribution rougher and that the effect of movement is to make it smoother; also, that the age structure grows smoother as time goes on. In so far as the eight cities and the period from 1911 to 1921 are concerned it was not movement that caused the peaks and depressions. The movements tended to fill in the depressions and merely exaggerated the peaks. This filling in of depressions by in-movements is in itself remarkable and apt to lead us off into dangerous speculations. What is really useful and consistently true is that the major in-movement (to cities) occurs during a limited span of years. Since this movement took place over ten years we have to conclude that, on the average, it occurred five years sooner than indicated on the chart; *e.g.*, the movement shown for ages 25–29 should be regarded as occurring when this group was, on the average, 22 years old; if for 20–24, when they were 17 years old, etc. The vast bulk of the movement, then, occurs at approximately ages 17–26 and this is true of all the cities examined. For the eight cities we find the mean age of the incomers (by 5-year groups) to be as follows:—

XXV.—EIGHT SELECTED CITIES, SHOWING MEAN AGE OF INCOMERS DURING THE PRECEDING 10 YEARS, 1931 AND 1921

City	Mean Age of Incomers of Preceding 10 Years	
	1931	1921
	years	years
Toronto	22·03	22·64
Winnipeg	19·47	20·52
Ottawa	21·34	21·61
Hamilton	24·67	22·23
Quebec	21·38	16·71
Windsor	24·48	25·86
Halifax	20·00	18·34
Victoria	44·74	24·02
Unweighted mean[1]	21·91	21·13
Unweighted mean of both sets[1]	21·52	
Standard deviation of both sets[1]	2·40	
Range of ages[1]	23·92 — 19·12	

[1] Victoria omitted.

Of course, it is not strictly correct to allow 5 years as the average period of residence of those moving in in the 10 years, as some cities would show more recent movements than others. This would probably explain Quebec in 1921. However, we have not sufficient data to correct this error.

We now come to differences shown as between cities. The general tendency for the age structure to be roughened by death and ageing and to be smoothed by movement has six exceptions as seen in Statement XXIV. These are: Quebec both in 1911 and 1921; Windsor in 1911; Halifax in 1911 and 1921, and Victoria in 1911. In these cases the expected survivors ten years later are smoother than the original population. There are, however, only three cases in which the actual population of 1921 and 1931 are less smooth than the expected survivors for the previous census, *viz.*, Quebec, 1931, Windsor, 1921 and Halifax, 1921. The reasons for these exceptions are not clear but an examination of the charts helps. A movement that was highly concentrated in age structure took place in Halifax between 1911 and 1921 making the age structure of the total population very rough. In Quebec, between 1921 and 1931, a very large inflow at fairly concentrat ages was superimposed upon a smooth population.

What seems remarkable about the influence of movement upon the age structure is that it is different for cities from what it has been for Canada as a whole. Previous to 1911 the Canadian population age structure was comparatively smooth and in 1911 suddenly roughened through the influence of immigration. Immigrants came in at certain ages and they followed heavy emigration which also took place at certain ages. The immigration began before 1901 (say, 1896) and by 1901 had succeeded in filling in the depressions left by emigration in the same manner as in the cities. The continuance of heavy immigration at the same ages occurring over a short period of time succeeded in making our population structure abnormal. Had the emigration been spread over 30 or 40 years it would have a smoothing effect. This draws attention to the fact that the very heavy immigration created an excess at certain ages. It did not merely fill in gaps; it upset our age structure. Going back to the cities, we take the case of Toronto in 1921. Without doubt, there was a serious gap at the age of 20 left by the survivors of 1911. This gap was more than half filled by incomers between 1911 and 1921 but the worst was that instead of being content to fill the gap they kept on until, by 1931, they produced an excess. Clearly, the trouble with Toronto's age structure in 1931 was that there were too many at ages 20–30 and too few—far too few—at earlier ages.

Turning now to the quantitative effect upon ageing as measured by average ages of movement, we have in Statement XXVI a description of the mean age of: (1) the total populations in 1911, 1921 and 1931; (2) the population over 10 years for the same dates, and (3) the expected survivors at the following censuses of the populations of 1911 and 1921.

XXVI.—EIGHT SELECTED CITIES, SHOWING MEAN AGE OF (1) TOTAL POPULATION, 1911, 1921 AND 1931, (2) POPULATION 10 YEARS OF AGE AND OVER, 1911, 1921 AND 1931 AND (3) SURVIVORS IN 1921 AND 1931 OF TOTAL POPULATIONS, 1911 AND 1921

City	Mean Age							
	Total Population			Population 10 Years and over			Survivors 10 Years Later of Total Population of	
	1911	1921	1931	1911	1921	1931	1911	1921
	years	years	years	years	years	years	years	years
Toronto	28·18	29·41	31·50	33·31	34·96	36·22	36·57	37·57
Winnipeg	25·41	27·09	30·02	31·01	33·29	34·46	34·45	35·75
Ottawa	27·19	28·59	30·38	33·12	34·63	35·76	35·32	36·48
Hamilton	28·65	29·11	30·31	33·85	35·14	35·76	36·82	37·18
Quebec	27·21	26·88	26·82	34·22	33·98	33·46	34·87	34·56
Windsor	28·58	27·94	28·51	33·95	33·92	34·29	36·60	36·30
Halifax	27·65	27·66	28·95	33·86	33·53	34·74	35·45	35·66
Victoria	29·54	31·68	35·86	33·76	37·03	39·94	38·03	39·53

In the first place, we ask the question "How much in ten years does a population age by the process of time and the influence of death, unassisted by migration?" An individual, of course, ages 10 years; but the differential death rates at different ages—higher at the older ages—and an increasing number of births from year to year cause a population to age less than this. Thus, we have the following:—

XXVII.—EIGHT SELECTED CITIES, SHOWING THE NUMBER OF YEARS EXPECTED SURVIVORS OF TOTAL POPULATIONS, 1911 AND 1921, AGED IN 10 YEARS

City	Years Aged in 10 Years by Survivors of Total Population of	
	1911	1921
Toronto	8·39	8·16
Winnipeg	9·04	8·66
Ottawa	8·13	7·89
Hamilton	8·17	8·07
Quebec	7·66	7·68
Windsor	8·02	8·36
Halifax	7·80	8·00
Victoria	8·49	7·85
Unweighted mean	8·21	8·08
Unweighted mean of both sets	8·15	
Standard deviation of both sets	0·36	

From the standard deviation we see that a good figure for the process of ageing is from 7·07 to 9·23 (3 times the standard deviation subtracted from or added to 8·15); also, that this ageing varies within the range of about 1 year. In only one of the above cases (Winnipeg, 1911-21) did it cover more than half of this range, so that we may say that the range is less than one year. The high birth rates of Quebec undoubtedly is the reason why it aged so much less, and the aforementioned gap at 20 why the population of Winnipeg, Victoria and Toronto aged more than others. The chart illustrates this point.

Turning now to the population over 10 years of age, this including all the survivors for the population 10 years earlier, we find the following phenomena:—

XXVIII.—EIGHT SELECTED CITIES SHOWING INCREASE IN AGE OF THE POPULATION 10 YEARS OF AGE AND OVER (A) FROM THE ORIGINAL POPULATIONS, 1911 AND 1921, TO THE SURVIVORS 10 YEARS LATER AND (B) FROM THE SURVIVORS 10 YEARS LATER TO THE ACTUAL POPULATIONS 10 YEARS LATER

City	Increase in Age			
	From the Original Population to the Survivors 10 Years Later in		From the Survivors 10 Years Later to the Actual Population 10 Years Later in	
	1921	1931	1921	1931
	years	years	years	years
Toronto	3·26	2·61	−1·61	−1·35
Winnipeg	3·44	2·46	−1·16	−1·29
Ottawa	2·20	1·85	−0·69	−0·72
Hamilton	2·97	2·04	−1·68	−1·42
Quebec	0·65	0·58	−0·89	−1·10
Windsor	2·65	2·38	−2·68	−2·01
Halifax	1·59	2·13	−1·92	−0·92
Victoria	4·27	2·50	−1·00	0·41
Unweighted mean	2·63	2·07	−1·45	−1·15
Unweighted mean of both sets	2·35		−1·30	

In the single case of Victoria (1931) we find the in- and out-movements increasing the age of the population; in all other cases they decrease it. In all cases the survivors are older than those of the actual population over 10 years of age and this is not a function of the passage of years but the displacement at the older ages of small numbers by larger. It is the true process of "ageing" of a population as distinguished from ageing of individuals. This statement is different from the immediately preceding statement in that the latter supposed the same persons at two dates ten years apart. The persons who were 0–4 in 1911 were 10–14 in 1921 and so on. In Statement XXVIII we are comparing the same age groups (not the same persons) at the different dates in every case and it is only the displacement of small by large figures at older ages by the sliding along of the population that increases the mean age. Now it is highly significant that the movements of the population rejuvenate these cities. On the average, the survivors were 2 years older than the original and the actual population (as affected by movement) was one year younger than the survivors (who would not be so affected), *i.e.*, the movement reduced the process of ageing by one-half. This is, of course, because the incomers are at the early adult ages and the outgoers are at somewhat later ages. This is illustrated in the chart. The most striking case is that of Windsor (1921) where the incomers actually succeeded in making the actual population younger in 1921 than it was in 1911, in spite of the passage of ten years. The same happened to Quebec but through somewhat different causes (see Statement XXVIII).

PART II

TABLE 1a. Percentages under 25 years of age and 65 years of age and over, with standard age, 220 counties and census divisions, by age class, Canada, males, 1931

Province	County or Census Division	P.C. under 25 Years	Standard Age[1]	P.C. 65 Years and over
	TYPE IA			
			years	
Nova Scotia	Cape Breton	55·5	22·4	4·5
New Brunswick	Madawaska	61·4	21·4	3·7
	Restigouche	60·9	21·4	3·8
Quebec	Abitibi	58·8	20·0	2·2
	Arthabaska	59·7	22·4	6·1
	Beauce	63·7	21·9	4·9
	Champlain	59·6	21·2	4·1
	Charlevoix	61·2	21·2	5·1
	Chicoutimi	63·4	20·2	2·9
	Dorchester	62·9	22·2	5·1
	Drummond	58·9	21·5	5·0
	Frontenac	65·0	21·9	4·2
	Gaspé	61·5	22·4	4·9
	Hull	56·8	21·6	4·9
	Labelle	61·2	21·5	3·9
	Lac-St-Jean	64·7	20·7	3·2
	Laprairie	55·6	22·1	6·1
	Lévis	59·8	22·1	5·5
	L'Islet	60·8	21·9	4·9
	Matane	64·8	21·0	3·3
	Mégantic	60·5	22·2	5·4
	Montmagny	60·1	22·3	6·1
	Montmorency	60·4	21·7	6·0
	Jesus Island	52·1	20·9	5·1
	Papineau	56·4	21·4	5·3
	Portneuf	58·9	22·2	5·7
	Quebec	55·4	21·2	4·6
	Richmond	57·1	22·2	6·0
	Rimouski	64·5	21·2	4·2
	Saguenay	59·6	20·9	3·9
	Sherbrooke	52·6	22·0	5·6
	St-Jean	53·8	21·5	5·6
	St-Maurice	58·3	20·9	3·6
	Temiskaming	52·2	19·0	2·4
	Témiscouata	63·6	21·8	4·5
	Terrebonne	56·9	22·1	5·4
Ontario	Nipissing	55·3	21·8	4·7
	District of Patricia	52·6	19·4	2·3
Manitoba	Division No. 1	59·0	21·8	4·6
	Division No. 2	58·9	21·4	4·5
	Division No. 5	53·8	21·9	4·0
	Division No. 14	55·5	22·2	5·3
Saskatchewan	Division No. 1	51·5	22·4	4·6
	Division No. 3	53·6	22·0	3·0
	Division No. 5	53·5	21·9	5·1
	Division No. 8	52·0	21·6	2·6
	Division No. 9	57·7	21·7	4·2
	Division No. 10	56·2	22·2	3·9
	Division No. 13	52·2	21·8	2·8
	Division No. 14	51·6	21·5	3·4
	Division No. 15	55·7	21·0	3·8
	Division No. 18	56·7	19·8	3·4
Alberta	Division No. 10	55·2	21·2	3·8
	Division No. 13	56·1	21·6	3·6
	Division No. 14	52·3	21·5	3·5
	Division No. 17	52·7	20·9	3·9
	TYPE IB			
			years	
New Brunswick	Gloucester	61·9	22·6	5·8
	Victoria	58·1	23·2	5·1
Quebec	Argenteuil	56·8	23·2	5·1
	Bonaventure	60·5	22·9	6·1
	Chambly	52·1	22·7	4·8
	Wolfe	61·4	22·7	5·7
Manitoba	Division No. 10	52·2	23·2	6·2
	Division No. 12	57·0	23·3	5·8
	Division No. 13	55·9	22·9	5·5
	Division No. 15	54·0	22·6	4·8
Saskatchewan	Division No. 2	51·5	22·5	3·7

[1] For explanation of this term see page 758.

TABLE 1a. Percentages under 25 years of age and 65 years of age and over, with standard age, 220 counties and census divisions, by age class, Canada, males, 1931—Con.

Province	County or Census Division	P.C. under 25 Years	Standard Age[1]	P.C. 65 Years and over
			years	
TYPE IIA				
Nova Scotia	Hants	52·2	19·5	8·9
Quebec	Jolicette	56·9	22·2	6·3
	Kamouraska	60·8	22·4	6·5
	Richelieu	53·2	21·9	6·3
	Shefford	55·7	22·3	6·3
	Vaudreuil	53·5	22·3	6·4
TYPE IIB				
			years	
Prince Edward Island	Prince	52·7	23·3	8·7
Nova Scotia	Inverness	54·2	24·7	9·2
	Richmond	52·9	24·4	10·5
	Yarmouth	52·7	24·2	8·8
New Brunswick	Kent	58·8	23·3	7·5
	Northumberland	57·1	23·3	6·8
	Sunbury	52·5	23·2	6·4
	Westmorland	54·0	22·5	6·5
Quebec	Bagot	56·4	23·0	8·0
	Bellechasso	61·7	22·9	6·7
	Berthier	56·1	22·9	6·7
	Châteauguay	51·4	23·4	8·0
	Compton	55·1	23·0	6·8
	Deux-Montagnes	53·8	22·9	8·0
	Iberville	55·7	22·8	6·4
	L'Assomption	53·4	22·5	7·9
	Lotbinière	58·8	22·9	6·6
	Maskinongé	58·4	22·8	6·3
	Missisquoi	51·7	22·7	7·5
	Montcalm	55·6	22·9	6·9
	Napierville	56·7	22·7	7·9
	Nicolet	57·1	23·1	6·9
	Pontiac	53·8	23·6	7·3
	Rouville	54·8	23·0	7·9
	Soulanges	54·9	23·3	7·6
	Stanstead	53·8	23·1	7·0
	St-Hyacinthe	54·4	22·6	7·6
	Verchères	56·7	22·6	7·0
	Yamaska	57·7	22·9	7·8
Ontario	Halihurton	52·1	23·3	7·2
	Prescott	56·1	23·1	7·0
	Renfrew	52·4	22·8	9·0
	Russell	59·0	22·9	6·7
TYPE IIIA				
			years	
Nova Scotia	Halifax	50·2	22·3	6·0
Quebec	Beauharnois	49·9	20·2	4·5
	Montreal Island	48·2	21·0	3·7
Ontario	Algoma	48·9	22·4	5 3
	Cochrane	44·9	18·5	1·8
	Essex	47·1	20·9	4·3
	Kenora	46·3	21·5	3·8
	Sudhury	49·6	19·9	3·0
	Thunder Bay	45·0	21·0	2·7
	Timiskaming	47·0	20·5	2·9
	Welland	45·1	21·4	4·9
	Wentworth	44·0	22·0	5·3
	York	43·6	21·6	4·7
Manitoba	Division No. 3	50·9	22·4	5·7
	Division No. 6	45·0	22·2	4·1
	Division No. 16	48·1	20·2	3·2
Saskatchewan	Division No. 4	49·1	22·0	3·4
	Division No. 6	50·3	21·4	3·3
	Division No. 7	50·8	22·3	3·1
	Division No. 11	49·2	21·8	3·1
	Division No. 12	50·5	22·3	3·5
	Division No. 16	51·1	21·5	3·4
	Division No. 17	50·5	21·9	3·6

TABLE 1a. Percentages under 25 years of age and 65 years of age and over, with standard age, 220 counties and census divisions, by age class, Canada, males, 1931—Con.

Province	County or Census Division	P.C. under 25 Years	Standard Age[1]	P.C. 65 Years and over
	TYPE IIIA—Con.			
			years	
Alberta	Division No. 1	49·1	22·1	4·0
	Division No. 2	48·3	21·6	3·2
	Division No. 3	48·4	21·5	3·4
	Division No. 4	45·3	21·8	3·7
	Division No. 6	43·9	21·9	3·4
	Division No. 8	48·8	22·4	5·0
	Division No. 9	45·8	22·0	4·0
	Division No. 11	47·8	21·9	3·9
	Division No. 12	43·6	21·1	2·9
	Division No. 15	49·9	20·6	2·8
	Division No. 16	46·6	21·1	3·3
British Columbia	Division No. 1	38·9	21·9	3·8
	Division No. 7	34·1	21·6	3·8
	Division No. 10	42·8	21·3	3·4
	TYPE IIIB			
			years	
Ontario	Carleton	48·5	22·6	5·9
	Rainy River	49·4	22·6	5·8
Manitoba	Division No. 4	48·4	22·6	6·1
	Division No. 8	48·6	22·8	6·1
	Division No. 9	49·9	22·7	4·6
	Division No. 11	51·0	22·7	5·5
Alberta	Division No. 5	48·0	22·5	3·6
	Division No. 7	50·3	22·6	3·9
British Columbia	Division No. 2	41·1	22·5	5·6
	Division No. 4	38·3	23·6	5·4
	Division No. 8	38·9	23·6	5·9
	Division No. 9	33·0	22·8	4·5
	TYPE IVA			
			years	
Ontario	Dufferin	44·7	22·2	9·5
	Waterloo	46·4	22·2	6·8
	TYPE IVB			
			years	
Prince Edward Island	Kings	50·2	23·8	10·8
	Queens	48·0	23·8	10·1
Nova Scotia	Annapolis	46·6	24·7	12·2
	Antigonish	49·7	24·8	11·8
	Colchester	50·3	23·7	8·4
	Cumberland	50·9	23·5	7·9
	Digby	50·7	24·7	10·1
	Guysborough	48·5	23·4	8·3
	Kings	50·6	23·5	8·5
	Lunenburg	48·7	23·6	9·6
	Pictou	49·1	23·6	7·8
	Queens	49·1	23·3	8·1
	Shelburne	51·3	23·7	9·8
	Victoria	48·1	24·3	11·5
New Brunswick	Albert	50·2	23·8	9·6
	Carleton	50·6	23·8	8·4
	Charlotte	46·8	23·8	8·9
	Kings	48·3	24·3	9·8
	Queens	50·2	23·6	7·6
	St. John	46·9	23·0	6·9
	York	49·9	23·4	7·6
Quebec	Brome	49·9	24·0	8·5
	Huntingdon	49·3	23·5	8·6

TABLE 1a. Percentages under 25 years of age and 65 years of age and over, with standard age, 220 counties and census divisions, by age class, Canada, males, 1931—Con.

Province	County or Census Division	P.C. under 25 Years	Standard Age[1]	P.C. 65 Years and over
	TYPE IVB—Con.			
			years	
Ontario	Addington	46·6	23·7	12·6
	Brant	45·1	23·0	7·8
	Bruce	45·3	24·1	10·5
	Dundas	46·8	24·2	10·4
	Durham	45·7	24·2	10·4
	Elgin	42·5	24·1	10·4
	Frontenac	44·8	23·0	8·2
	Glengarry	51·2	23·3	9·0
	Grenville	43·0	24·4	11·6
	Grey	45·0	23·8	10·3
	Haldimand	44·9	23·8	9·8
	Halton	44·1	23·4	8·1
	Hastings	49·0	23·4	8·5
	Huron	42·7	24·6	12·1
	Kent	45·8	22·9	8·2
	Lambton	43·9	23·3	9·0
	Lanark	45·7	23·9	9·8
	Leeds	43·3	24·0	9·8
	Lennox	41·0	22·9	11·5
	Lincoln	44·5	23·1	6·7
	Manitoulin	50·1	22·9	7·7
	Middlesex	42·3	23·5	8·6
	Muskoka	47·9	22·8	8·1
	Norfolk	44·8	23·1	9·2
	Northumberland	45·2	24·1	10·3
	Ontario	44·0	22·5	7·6
	Oxford	44·0	23·6	9·8
	Parry Sound	49·9	22·6	6·9
	Peel	43·8	22·8	8·2
	Perth	45·0	23·8	9·3
	Peterborough	47·5	23·6	8·4
	Prince Edward	44·7	24·4	11·8
	Simcoe	47·2	23·7	8·6
	Stormont	51·2	22·6	7·3
	Victoria	44·0	24·1	11·0
	Wellington	44·6	23·4	8·8
Manitoba	Division No. 7	45·9	23·0	6·9
British Columbia	Division No. 3	41·8	23·9	6·7
	Division No. 5	36·8	24·5	7·3
	Division No. 6	40·1	23·3	6·3

TABLE 1b. Percentages under 25 years of age and 65 years of age and over, with standard age, 220 counties and census divisions, by age class, Canada, females, 1931

Province	County or Census Division	P.C. under 25 Years	Standard Age[1]	P.C. 65 Years and over
	TYPE IA			
			years	
Nova Scotia	Cape Breton	58·2	22·0	5·0
New Brunswick	Gloucester	62·8	22·2	5·5
	Madawaska	65·1	20·7	3·2
	Restigouche	64·1	20·9	3·6
	Victoria	62·1	21·6	4·1
Quebec	Abitibi	67·8	19·6	1·6
	Arthabaska	60·8	22·0	5·4
	Beauce	64·9	21·3	4·5
	Beauharnois	54·4	21·3	5·2
	Berthier	57·2	22·4	6·1
	Chambly	51·4	22·0	5·3
	Champlain	62·9	21·0	3·7
	Charlevoix	62·6	21·0	5·1
	Chicoutimi	67·0	19·8	2·6
	Dorchester	64·2	21·8	5·1
	Drummond	60·7	21·2	4·4
	Frontenac	66·5	20·9	3·9
	Gaspé	64·0	21·9	4·9
	Hull	59·0	21·2	4·5
	Jesus Island	59·4	21·5	5·1
	Labelle	65·2	20·8	3·5
	Lac-St-Jean	68·5	20·3	2·8
	Laprairie	57·0	21·9	5·9

[1] For explanation of this term see page 758.

TABLE 1b. Percentages under 25 years of age and 65 years of age and over, with standard age, 220 counties and census divisions, by age class, Canada, females, 1931—Con.

Province	County or Census Division	P.C. under 25 Years	Standard Age[1]	P.C. 65 Years and over
	TYPE IA—Con.			
			years	
Quebec—Con.	Lévis	57·1	21·8	6·2
	L'Islet	63·0	21·7	5·0
	Maskinongé	60·1	22·2	5·4
	Matane	67·8	20·6	3·1
	Mégantic	61·5	21·7	5·0
	Montmorency	60·6	21·6	5·7
	Papineau	60·7	21·8	5·1
	Portneuf	60·5	21·9	5·2
	Québec	54·1	21·2	5·4
	Richelieu	55·4	21·9	6·1
	Richmond	57·8	21·9	5·8
	Rimouski	65·5	21·0	4·2
	Saguenay	65·1	20·6	3·6
	Shefford	56·3	22·2	6·0
	Sherbrooke	52·7	21·4	5·1
	St-Jean	53·7	21·3	5·5
	St-Maurice	59·8	20·6	3·4
	Témiscouata	65·2	21·1	4·3
	Temiskaming	65·4	19·6	1·8
	Terrebonne	58·4	21·7	4·9
	Wolfe	63·2	22·4	4·6
Ontario	Algoma	55·1	21·6	4·7
	Cochrane	60·4	18·3	1·5
	Haliburton	55·3	22·4	6·2
	Kenora	55·1	21·1	3·5
	Nipissing	60·0	21·1	3·8
	Parry Sound	56·0	22·3	5·4
	Rainy River	57·8	21·2	3·8
	Sudbury	60·6	19·8	2·4
	Thunder Bay	54·2	20·6	2·7
	Timiskaming	57·4	20·3	2·5
	District of Patricia	60·9	20·6	3·8
Manitoba	Division No. 1	64·9	21·5	3·4
	Division No. 2	60·9	20·8	3·9
	Division No. 3	54·2	22·0	4·9
	Division No. 5	58·2	21·2	3·4
	Division No. 9	52·1	21·8	4·6
	Division No. 11	55·0	22·0	4·8
	Division No. 12	60·7	22·4	5·5
	Division No. 13	59·5	22·1	4·7
	Division No. 14	60·5	21·6	4·3
	Division No. 15	58·2	21·5	3·8
	Division No. 16	60·8	20·6	3·3
Saskatchewan	Division No. 1	57·2	21·8	3·8
	Division No. 2	58·5	21·5	3·0
	Division No. 3	60·8	20·3	2·4
	Division No. 4	58·5	20·6	2·7
	Division No. 5	58·9	21·6	4·6
	Division No. 6	55·4	20·6	3·2
	Division No. 7	56·5	21·3	3·1
	Division No. 8	60·4	20·3	2·4
	Division No. 9	63·1	21·2	3·8
	Division No. 10	62·2	21·2	3·4
	Division No. 11	55·4	20·9	3·1
	Division No. 12	56·6	21·4	3·3
	Division No. 13	60·1	20·7	2·7
	Division No. 14	61·0	20·7	2·4
	Division No. 15	62·6	20·6	3·1
	Division No. 16	59·2	21·0	3·2
	Division No. 17	58·7	21·2	3·0
	Division No. 18	63·4	19·5	3·3
Alberta	Division No. 1	56·6	21·6	3·5
	Division No. 2	56·6	21·0	3·0
	Division No. 3	58·5	20·6	2·2
	Division No. 4	54·6	21·3	3·0
	Division No. 5	57·3	21·1	2·7
	Division No. 7	57·5	21·4	3·4
	Division No. 8	54·8	21·7	4·2
	Division No. 9	55·4	21·1	3·5
	Division No. 10	62·9	20·9	3·2
	Division No. 11	53·6	21·1	3·6
	Division No. 12	57·0	19·9	2·0
	Division No. 13	63·7	20·4	2·9
	Division No. 14	61·7	20·6	2·6
	Division No. 15	61·8	19·7	2·0
	Division No. 16	59·0	19·7	2·4
	Division No. 17	61·6	20·4	2·4
British Columbia	Division No. 1	53·5	21·3	2·5
	Division No. 8	54·8	21·5	2·9
	Division No. 9	52·6	20·9	2·7
	Division No. 10	58·3	20·4	1·7

TABLE 1b. Percentages under 25 years of age and 65 years of age and over, with standard age, 220 counties and census divisions, by age class, Canada, females, 1931—Con.

Province	County or Census Division	P.C. under 25 Years	Standard Age[1]	P.C. 65 Years and over
			years	
TYPE IB				
New Brunswick	Northumberland	58·5	22·6	6·1
	Sunbury	55·5	22·6	6·2
Quebec	Compton	57·4	22·8	6·2
Manitoba	Division No. 10	56·0	22·5	5·2
			years	
TYPE IIA				
New Brunswick	Westmorland	53·4	22·0	6·7
Quebec	Bellechasse	61·3	22·2	6·5
	Bonaventure	61·9	22·4	6·5
	Deux-Montagnes	56·0	22·3	7·3
	Joliette	58·1	21·9	6·3
	Kamouraska	61·8	22·3	6·5
	Montmagny	59·7	21·8	6·4
	Vaudreuil	54·0	21·7	6·8
	Verchères	55·8	22·0	6·4
	Yamaska	58·2	22·4	6·6
			years	
TYPE IIB				
Prince Edward Island	Prince	52·5	23·5	8·7
Nova Scotia	Hants	51·6	23·3	9·0
	Inverness	53·1	24·8	10·9
	Richmond	51·6	24·1	11·8
New Brunswick	Kent	58·9	23·2	7·9
	Queens	51·6	23·4	8·3
Quebec	Argenteuil	54·6	22·5	6·7
	Bagot	57·0	22·8	7·1
	Châteauguay	51·5	23·3	9·0
	Iberville	56·3	22·6	6·3
	L'Assomption	55·6	22·6	6·8
	Lotbinière	60·8	22·7	6·4
	Missisquoi	52·1	22·5	7·1
	Montcalm	58·6	22·6	6·3
	Napierville	56·3	23·4	7·6
	Nicolet	57·6	22·5	6·7
	Pontiac	57·2	22·6	6·9
	Rouville	53·2	22·8	7·5
	Soulanges	55·1	22·9	7·3
	Stanstead	53·8	22·7	6·4
Ontario	Manitoulin	53·4	22·7	6·3
	Prescott	56·4	22·9	7·2
	Renfrew	52·7	22·8	7·1
	Russell	58·7	22·6	6·4
	Stormont	51·9	22·5	7·4
			years	
TYPE IIIA				
Quebec	Montreal Island	49·3	20·9	4·3
Ontario	Essex	49·7	20·8	4·5
	Welland	48·4	21·6	5·5
	York	42·8	21·7	5·6
Manitoba	Division No. 6	49·3	21·3	4·0
Alberta	Division No. 6	50·1	21·3	3·4
British Columbia	Division No. 2	50·9	22·0	4·3
	Division No. 6	51·0	22·0	4·6
	Division No. 7	50·5	19·8	2·5
			years	
TYPE IIIB				
Manitoba	Division No. 4	51·0	22·5	5·2
	Division No. 7	49·9	22·6	5·9
	Division No. 8	51·3	22·7	5·6
British Columbia	Division No. 3	49·4	22·8	5·2
	Division No. 4	44·2	22·5	5·2

TABLE 1b. Percentages under 25 years of age and 65 years of age and over, with standard age, 220 counties and census divisions, by age class, Canada, females, 1931—Con.

Province	County or Census Division	P.C. under 25 Years	Standard Age[1]	P.C. 65 Years and over
		TYPE IVA		
			years	
Nova Scotia	Halifax	50·4	21·8	6·4
Quebec	St-Hyacinthe	50·4	22·1	7·6
Ontario	Carleton	46·4	22·0	6·5
	Wentworth	44·2	22·1	6·3
		TYPE IVB		
			years	
Prince Edward Island	Kings	50·5	24·2	10·7
	Queens	47·5	23·3	10·9
Nova Scotia	Annapolis	45·3	24·7	12·2
	Antigonish	49·3	24·9	12·8
	Colchester	50·4	23·3	8·7
	Cumberland	50·7	23·1	7·9
	Digby	50·2	24·2	9·8
	Guysborough	51·1	23·7	9·4
	Kings	49·9	23·3	9·1
	Lunenburg	48·7	23·5	9·7
	Pictou	48·6	23·2	8·9
	Queens	50·7	23·2	8·6
	Shelburne	50·3	23·6	10·5
	Victoria	49·1	24·8	13·5
	Yarmouth	50·3	23·8	10·2
New Brunswick	Albert	51·0	23·3	9·7
	Carleton	51·3	23·4	8·1
	Charlotte	47·5	23·7	9·2
	Kings	47·7	23·9	9·4
	St. John	45·7	22·5	7·5
	York	50·6	22·8	7·4
Quebec	Brome	48·7	23·8	8·7
	Huntingdon	49·6	23·4	10·0
Ontario	Addington	47·1	24·1	10·4
	Brant	44·0	23·5	8·5
	Bruce	44·2	24·2	10·7
	Dufferin	42·4	24·0	10·0
	Dundas	43·8	24·3	10·6
	Durham	41·3	24·2	11·5
	Elgin	40·3	24·3	11·1
	Frontenac	44·3	23·4	9·0
	Glengarry	49·7	24·0	9·9
	Grenville	40·7	24·4	12·2
	Grey	44·1	24·1	10·0
	Haldimand	43·5	23·8	10·2
	Halton	42·8	23·4	8·5
	Hastings	47·8	23·3	8·8
	Huron	40·5	25·2	12·1
	Kent	46·8	23·1	8·0
	Lambton	43·8	23·6	9·1
	Lanark	43·1	23·9	10·0
	Leeds	41·6	24·2	11·1
	Lennox	42·3	24·5	12·0
	Lincoln	44·0	22·8	7·4
	Middlesex	40·8	23·5	9·4
	Muskoka	50·2	22·7	7·0
	Norfolk	44·3	23·3	10·1
	Northumberland	42·0	24·2	11·5
	Ontario	44·8	22·7	8·1
	Oxford	41·8	23·9	10·4
	Peel	43·2	23·2	8·5
	Perth	43·2	24·0	9·8
	Peterborough	45·9	23·5	8·2
	Prince Edward	40·7	24·7	13·8
	Simcoe	45·9	23·7	8·7
	Victoria	42·3	24·3	10·6
	Waterloo	45·7	22·5	7·3
	Wellington	43·0	23·6	9·8
British Columbia	Division No. 5	43·1	23·5	6·9

TABLE 2a. Age rank of the counties and census divisions of Canada (male population), 1931, as based upon the correlation between age structure and (1) percentage born in the province of residence in 1931, (2) average age settlement of the area and (3) resident death rate, 1931

Index[1] of Age Rank as Correlated with			County or Census Division	Age Structure			Age Type	P.C. Born in Province of Residence	Age of Settlement	Death Rate	Age Rank as Calculated on Basis of Correlation with		
(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate		P.C. under 25	Standard Age[2]	P.C. 65 and over					(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate
					years				years				
100	**100**	**100**	**Average of 220 counties and census divisions...**	**51·4**	**22·5**	**6·3**	**–**	**75·6**	**38**	**10·8**	**64·0**	**30·6**	**9·5**
195	197	178	Ilants, N.S.	52·2*	19·5	8·9	IIA	94·2	49	0·3	124·7	60·3	16·9
180	214	161	Addington, Ont.	46·6	23·7	12·6	IVB	93·5	53	13·3	115·3	65·6	15·3
168	199	145	Antigonish, N.S.	49·7	24·8	11·8	IVB	94·9	53	14·2	107·5	60·9	13·8
166	100	146	Kings, P.E.I.	50·2*	23·8	10·8	IVB	93·8	50	7·7	106·5	58·2	13·9
166	187	141	Richmond, N.S.	52·9	24·4	10·5	IIB	95·9	51	0·3	106·0	57·3	13·4
163	198	144	Annapolis, N.S.	46·6	24·7	12·2	IVB	93·6	50	12·3	104·2	60·7	13·7
163	193	144	Victoria, N.S.	48·1	24·3	11·5	IVB	93·1	52	10·2	104·1	59·0	13·7
161	163	137	Yamaska, Que.	57·7	22·9	7·8	IIB	98·1	51	13·6	103·2	49·8	13·0
161	164	138	Napierville, Que.	56·7	22·7*	7·9	IIB	97·4	57	10·9	103·0	50·1	13·1
161	153	133	Bellechasse, Que.	61·7	22·9	6·7*	IIB	98·8	47	12·1	102·8	46·9	12·6
160	152	133	Kamouraska, Que.	60·8	22·4*	6·5*	IIA	98·5	50	11·7	102·3	46·4	12·6
159	171	141	Renfrew, Ont.	52·4*	22·8	9·0	IIB	88·5	41	12·3	102·0	52·4	13·4
158	147	136	Montmorency, Que.	60·4	21·7	6·0*	IA	98·8	47	12·7	101·4	45·0	12·9
158	162	136	Bagot, Que.	56·4	23·0	8·0	IIB	07·7	50	14·4	101·1	49·6	12·9
157	175	138	Shelburne, N.S.	51·3*	23·7	9·8	IVB	97·4	49	13·9	100·4	53·6	13·1
157	157	131	Kent, N.B.	58·8	23·3	7·5	IIB	95·9	46	12·3	100·2	48·0	12·4
154	137	132	Charlevoix, Que.	61·2	21·2	5·1	IA	99·3	46	16·3	98·5	41·8	12·5
153	129	128	Rimouski, Que.	64·5	21·2	4·2	IA	98·6	43	11·2	98·2	39·4	12·2
153	134	127	Beauce, Que.	63·7	21·9	4·9	IA	99·0	42	11·9	97·8	41·0	12·1
153	188	140	Prince Edward, Ont.	44·7	24·4	11·8	IVB	87·0	52	12·9	97·7	57·5	13·3
153	175	139	Queens, P.E.I.	48·0	23·3	10·1	IVB	93·2	50	12·9	97·7	53·5	13·2
152	143	129	Montmagny, Que.	60·1	22·3*	6·1*	IA	98·7	46	10·6	97·3	43·7	12·2
151	140	126	Gloucester, N.B.	61·9	22·6*	5·8*	IB	97·1	41	12·0	96·8	42·7	12·0
150	185	145	Lennox, Ont.	41·0	22·9	11·5	IVB	84·8	53	12·9	96·2	56·5	13·8
150	162	134	Prince, P.E.I.	52·7*	23·3	8·7	IIB	95·2	46	9·9	06·2	40·5	12·7
150	156	134	L'Assomption, Que.	53·4	22·5*	7·9	IIB	97·3	52	16·5	96·1	47·6	12·7
150	156	132	Rouville, Que.	54·8	23·0	7·9	IIB	95·3	54	12·0	96·0	47·6	12·5
150	145	127	Russell, Ont.	59·0	22·9	6·7*	IIB	87·0	40	9·7	95·0	44·5	12·1
149	141	126	Arthabaska, Que.	59·7	22·4*	6·1*	IA	97·5	42	11·9	95·6	43·1	12·0
149	133	124	Dorchester, Que.	62·9	22·2	5·1	IA	09·5	45	12·9	95·5	40·7	11·8
149	163	134	Glengarry, Ont.	51·2*	23·3	9·0	IVB	85·5	50	11·0	95·2	50·0	12·7
149	155	132	Deux-Montagnes, Que.	53·8	22·9	8·0	IIB	98·0	53	14·4	95·1	47·5	12·5
149	152	132	St-Hyacinthe, Que.	54·4	22·6*	7·6	IIB	96·2	48	13·6	95·1	46·5	12·5
149	147	128	Verchères, Que.	56·7	22·6*	7·0	IIB	96·1	52	11·7	95·1	45·1	12·2
148	167	133	Albert, N.B.	50·2*	23·8	9·6	IVB	92·3	50	13·2	94·9	51·2	12·6
148	164	125	Inverness, N.S.	54·2	24·7	9·2	IIB	96·5	49	13·5	94·7	50·1	11·9
148	127	123	Témiscouata, Que.	63·6	21·8	4·5	IA	96·7	41	10·6	94·5	38·8	11·7
148	124	122	Frontenac, Que.	65·0	21·9	4·2	IA	97·8	34	12·2	94·4	38·0	11·6
148	143	125	Lotbinière, Que.	58·8	22·9	6·6*	IIB	98·4	49	14·4	94·4	43·8	11·9
147	171	128	Digby, N.S.	50·7*	24·7	10·1	IVB	96·0	48	12·5	94·3	52·2	12·2
147	186	137	Huron, Ont.	42·7	24·6	12·1	IVB	91·1	48	13·2	94·0	57·0	13·0
147	139	123	Bonaventure, Que.	60·5	22·9	6·1*	IB	96·6	42	11·2	93·9	42·4	11·7
147	135	123	Wolfe, Que.	61·4	22·7*	5·7	IB	07·7	40	11·8	93·8	41·4	11·7
145	115	123	Lac-St-Jean, Que.	64·7	20·7	3·2	IA	97·7	28	12·0	92·7	35·1	11·7
144	165	132	Lunenburg, N.S.	48·7	23·6	9·6	IVB	97·4	45	11·2	92·4	50·4	12·5
144	132	123	Lévis, Que.	59·8	22·1	5·5	IA	98·8	45	12·7	92·2	40·4	11·7
144	131	123	Mégantic, Que.	60·5	22·2	5·4	IA	97·3	42	11·5	92·2	40·2	11·7
143	114	121	Matane, Que.	64·8	21·0	3·3	IA	97·8	33	13·3	91·8	35·0	11·5
143	138	126	Joliette, Que.	56·9	22·2	6·3*	IIA	96·9	48	15·9	91·7	42·2	12·0
143	163	138	Dufferin, Ont.	44·7	22·2	9·5	IVA	88·6	46	11·3	91·6	50·0	13·1
143	142	123	Nicolet, Que.	57·1	23·1	6·9	IIB	98·9	47	15·0	91·5	43·5	11·7
143	170	135	Grenville, Ont.	43·0	24·4	11·6	IVB	88·1	53	14·4	91·4	54·8	12·8
143	137	122	Maskinongé, Que.	58·4	22·8	6·3*	IIB	08·4	49	12·5	91·3	42·0	11·6
143	148	125	Soulanges, Que.	54·9	23·3	7·6	IIB	93·5	53	12·9	91·2	45·2	11·9
142	132	124	Portneuf, Que.	58·9	22·2	5·7	IA	98·8	45	12·0	91·0	40·5	11·8
142	169	129	Dundas, Ont.	46·8	24·2	10·4	IVB	91·3	50	12·1	90·9	51·8	12·3
141	156	124	Yarmouth, N.S.	52·7*	24·2	8·8	IIB	94·4	47	12·6	90·5	47·7	11·8
141	125	121	L'Islet, Que.	60·8	21·9	4·9	IA	98·2	46	11·4	90·4	38·4	11·5
141	174	133	Victoria, Ont.	44·0	24·1	11·0	IVB	89·6	47	12·1	90·4	53·1	12·6
141	110	122	Chicoutimi, Que.	63·4	20·2	2·9	IA	96·0	33	11·0	90·2	33·6	11·6
141	141	122	Prescott, Ont.	56·1	23·1	7·0	IIB	87·1	45	14·0	90·0	43·2	11·6
140	125	123	Drummond, Que.	58·9	21·5	5·0	IA	93·7	41	12·2	89·5	38·3	11·7
140	133	123	Richmond, Que.	57·1	22·2	6·0*	IA	92·7	40	12·9	89·3	40·7	11·7
139	140	122	Montcalm, Que.	55·6	22·9	6·9	IIB	97·3	50	11·1	89·1	42·7	11·6
139	139	120	Northumberland, N.B.	57·1	23·3	6·8*	IIB	95·1	44	11·8	89·0	42·4	11·4
139	168	128	Bruce, Ont.	45·3	24·1	10·5	IVB	92·1	45	12·4	88·9	51·4	12·2

[1] Base: average of 220 counties and census divisions.
[2] For explanation of this term see page 758.
[3] Death rates for Montreal and Jesus Islands separately are not available.
* Within the field of the true mean (see pp. 766-7).

TABLE 2a. Age rank of the counties and census divisions of Canada (male population), 1931, as based upon the correlation between age structure and (1) percentage born in the province of residence in 1931, (2) average age of settlement of the area and (3) resident death rate, 1931—Con.

Index[1] of Age Rank as Correlated with			County or Census Division	Age Structure			Age Type	P.C. Born in Province of Residence	Age of Settlement	Death Rate	Age Rank as Calculated on Basis of Correlation with		
(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate		P.C. under 25	Standard Age[2]	P.C. 65 and over					(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate
					years				years				
138	137	121	Berthier, Que.	56·1	22·9	6·7*	IIB	97·4	50	13·6	88·5	41·9	11·5
138	123	117	Gaspé, Que.	61·5	22·4*	4·9	IA	98·4	40	12·8	88·5	37·7	11·1
138	166	129	Grey, Ont.	45·0	23·8	10·3	IVB	90·8	45	12·5	88·4	50·7	12·3
138	161	125	Kings, N.B.	48·3	24·3	9·8	IVB	87·8	51	11·3	88·3	49·3	11·9
138	166	127	Durham, Ont.	45·7	24·2	10·4	IVB	81·6	54	11·2	88·1	50·8	12·1
138	134	121	Shefford, Que.	55·7	22·3*	6·3*	IIA	94·9	45	12·3	88·0	40·9	11·5
137	151	123	Kings, N.S.	50·6*	23·5	8·5	IVB	92·3	48	10·0	87·5	46·1	11·7
136	131	122	Laprairie, Que.	56·6	22·1	6·1*	IA	93·8	52	10·5	87·3	40·2	11·6
136	125	122	Papineau, Que.	56·4	21·4	5·3	IA	87·0	41	10·0	86·8	38·1	11·6
135	164	126	Northumberland, Ont.	45·2	24·1	10·3	IVB	85·9	52	13·4	86·7	50·1	12·0
135	142	123	Missisquoi, Que.	51·7*	22·7*	7·5	IIB	89·2	49	11·6	86·5	43·3	11·7
135	136	119	Compton, Que.	55·1	23·0	6·8*	IIB	91·1	41	9·6	86·1	41·5	11·3
133	144	121	Châteauguay, Que.	51·4*	23·4	8·0	IIB	94·2	53	12·1	85·4	44·1	11·5
133	117	118	Division No. 2, Man.	58·9	21·4	4·5	IA	70·1	30	8·0	85·4	35·7	11·2
133	131	117	Iberville, Que.	55·7	22·8	6·4*	IIB	95·5	56	12·8	85·4	40·2	11·1
133	149	122	Huntingdon, Que.	49·3	23·5	8·6	IVB	89·8	53	14·0	85·2	45·5	11·6
133	111	119	Saguenay, Que.	59·6	20·9	3·9	IA	96·6	37	10·7	85·0	34·1	11·3
133	111	115	Labelle, Que.	61·2	21·5	3·9	IA	97·1	24	12·7	84·8	34·0	10·9
132	113	117	Champlain, Que.	59·6	21·2	4·1	IA	96·7	39	14·6	84·7	34·5	11·1
132	157	124	Lanark, Ont.	45·7	23·9	9·8	IVB	88·0	49	12·4	84·6	48·1	11·8
132	130	122	Richelieu, Que.	53·2	21·9	6·3*	IIA	96·7	50	16·2	84·5	39·8	11·6
132	146	119	Carleton, N.B.	50·6*	23·8	8·4	IVB	88·4	47	8·8	84·4	44·7	11·3
132	146	119	Colchester, N.S.	50·3*	23·7	8·4	IVB	90·7	48	10·7	84·3	44·6	11·3
132	131	118	Westmorland, N.B.	54·0	22·5*	6·5*	IIB	86·3	42	8·8	84·2	40·1	11·2
131	146	121	Hastings, Ont.	49·0	23·4	8·5	IVB	87·8	47	12·6	84·1	44·8	11·5
131	108	115	Madawaska, N.B.	61·4	21·4	3·7	IA	85·3	36	13·3	84·1	33·2	10·9
131	135	118	Stanstead, Que.	53·8	23·1	7·0	IIB	88·5	43	11·7	84·1	41·2	11·2
131	137	121	Stormont, Ont.	51·2*	22·6*	7·3	IVB	83·2	45	12·3	84·0	41·9	11·5
131	122	117	Terrebonne, Que.	56·9	22·1	5·4	IA	95·4	43	11·5	83·8	37·2	11·1
131	115	116	Division No. 1, Man.	59·0	21·8	4·6	IA	64·7	26	8·1	83·7	35·3	11·0
131	109	115	Restigouche, N.B.	60·9	21·4	3·8	IA	76·0	34	10·0	83·7	33·4	10·9
130	156	123	Haldimand, Ont.	44·9	23·8	9·8	IVB	86·2	51	13·5	83·4	47·7	11·7
130	129	118	Vaudreuil, Que.	53·5	22·3*	6·4*	IIA	92·8	50	11·9	83·4	39·5	11·2
130	136	115	Pontiac, Que.	53·8	23·6	7·3	IIB	89·9	45	10·1	83·3	41·6	10·9
129	139	121	Manitoulin, Ont.	50·1*	22·9	7·7	IVB	94·0	35	11·3	82·8	42·4	11·5
129	155	124	Oxford, Ont.	44·0	23·6	9·8	IVB	79·4	49	11·6	82·5	47·4	11·8
129	140	117	Cumberland, N.S.	50·9*	23·5	7·9	IVB	84·8	43	13·3	82·4	42·8	11·1
129	117	117	Hull, Que.	56·8	21·6	4·9	IA	87·0	38	11·9	82·4	35·7	11·1
129	150	124	Norfolk, Ont.	44·8	23·1	9·2	IVB	75·8	50	13·4	82·4	45·9	11·8
129	122	120	St-Jean, Que.	53·8	21·5	5·6	IA	90·9	50	10·9	82·3	37·3	11·4
128	144	116	Brome, Que.	49·9	24·0	8·5	IVB	86·9	50	10·1	82·0	44·0	11·0
128	141	121	Muskoka, Ont.	47·9	22·8	8·1	IVB	82·5	34	10·6	81·9	43·2	11·5
127	121	113	Argenteuil, Que.	56·8	22·8	5·7	IB	89·4	47	10·5	81·4	37·1	10·7
127	140	119	Queens, N.S.	49·1	23·3	8·1	IVB	92·6	49	11·5	81·3	42·9	11·3
126	103	119	Division No. 18, Sask.	56·7	19·8	3·4	IA	78·1	27	10·3	80·9	31·6	11·3
126	141	118	Guysborough, N.S.	48·5	23·4	8·3	IVB	92·5	48	10·9	80·9	43·2	11·2
126	158	122	Elgin, Ont.	42·5	24·1	10·4	IVB	80·7	47	11·5	80·8	48·3	11·6
125	132	114	Haliburton, Ont.	52·1*	23·3	7·2	IIB	91·6	38	6·9	80·2	40·3	10·8
124	144	117	Charlotte, N.B.	46·8	23·8	8·9	IVB	79·2	51	11·7	79·5	44·2	11·1
124	119	108	Division No. 12, Man.	57·0	23·3	5·8*	IB	61·6	23	8·1	79·2	36·5	10·3
123	110	115	Quebec, Que.	55·4	21·2	4·6	IA	96·5	43	16·3	78·8	33·7	10·9
123	102	114	St-Maurice, Que.	58·3	20·9	3·6	IA	94·8	38	14·6	78·8	31·3	10·8
123	147	118	Perth, Ont.	45·0	23·8	9·3	IVB	85·9	46	13·7	78·7	44·9	11·2
123	115	112	Division No. 14, Man.	55·5	22·2	5·3	IA	58·1	23	7·4	78·6	35·2	10·6
122	141	116	Simcoe, Ont.	47·2	23·7	8·6	IVB	85·6	43	12·8	78·3	43·0	11·0
122	139	114	Peterborough, Ont.	47·5	23·6	8·4	IVB	82·4	43	11·9	77·9	42·4	10·8
122	149	118	Leeds, Ont.	43·3	24·0	9·8	IVB	84·5	50	14·0	77·8	45·7	11·2
122	132	114	York, N.B.	49·9	23·4	7·6	IVB	91·3	47	12·8	77·8	40·4	10·8
121	113	117	Jesus Island, Que.	52·1*	20·9	5·1	IA	93·1	47	12·2	77·5	34·5	11·1
121	105	108	Division No. 9, Sask.	57·7	21·7	4·2	IA	54·7	21	7·1	77·3	32·1	10·3
120	131	112	Queens, N.B.	50·2*	23·6	7·6	IVB	86·0	52	11·1	77·1	40·2	10·6
120	125	114	Parry Sound, Ont.	49·9	22·6*	6·9	IVB	84·5	33	9·5	76·8	38·4	10·8
120	136	117	Kent, Ont.	45·8	22·9	8·2	IVB	78·7	43	13·7	76·7	41·5	11·1
120	142	118	Lambton, Ont.	43·9	23·3	9·0	IVB	83·2	43	10·9	76·6	43·5	11·2
119	114	106	Division No. 13, Man.	55·9	22·9	5·5	IB	59·4	22	9·9	76·4	34·9	10·1
119	132	112	Pictou, N.S.	49·1	23·6	7·8	IVB	86·7	47	12·2	76·2	40·3	10·6
119	110	103	Victoria, N.B.	58·1	23·2	5·1	IB	84·0	37	11·6	76·0	33·7	9·8
118	139	117	Wellington, Ont.	44·6	23·4	8·8	IVB	81·2	47	12·2	75·8	42·6	11·1
118	114	112	Sherbrooke, Que.	52·6*	22·0	5·6	IA	87·8	35	13·2	75·6	34·9	10·6

TABLE 2a. Age rank of the counties and census divisions of Canada (male population), 1931, as based upon the correlation between age structure and (1) percentage born in the province of residence in 1931, (2) average age of settlement of the area and (3) resident death rate, 1931—Con.

Index[1] of Age Rank as Correlated with			County or Census Division	Age Structure			Age Type	P.C. Born in Province of Residence	Age of Settlement	Death Rate	Age Rank as Calculated on Basis of Correlation with		
(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate		P.C. under 25	Standard Age[2]	P.C. 65 and over					(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate
					years				years				
118	106	109	Nipissing, Ont.	55·3	21·8	4·7	IA	73·5	26	8·7	75·3	32·5	10·4
116	118	106	Sunbury, N.B.	52·5*	23·2	6·4*	IIB	87·7	50	9·9	74·2	36·2	10·1
115	108	108	Division No. 5, Sask.	53·5	21·9	5·1	IA	53·7	22	8·7	73·8	33·1	10·3
115	07	108	Division No. 15, Sask.	55·7	21·0	3·8	IA	51·7	20	8·3	73·4	29·8	10·3
115	132	114	Frontenac, Ont.	44·8	23·0	8·2	IVB	79·9	48	13·8	73·4	40·4	10·8
114	85	106	Abitibi, Que.	58·8	20·0	2·2	IA	92·1	16	9·1	73·2	26·0	10·1
113	131	114	Peel, Ont.	43·8	22·8	8·2	IVB	73·1	51	8·8	72·4	40·0	10·8
112	114	104	Division No. 10, Man.	52·2*	23·2	6·2*	IB	56·8	27	9·6	71·6	34·8	9·9
111	101	113	Beauharnois, Que.	40·0	20·2	4·5	IIIA	80·5	45	12·5	71·2	30·9	10·7
111	112	107	Halifax, N.S.	50·2*	22·3*	6·0*	IIIA	83·7	43	12·6	71·1	34·3	10·2
110	94	104	Division No. 10, Alta.	55·2	21·2	3·8	IA	48·0	19	6·8	70·6	28·8	9·9
110	125	111	Brant, Ont.	45·1	23·0	7·8	IVB	72·7	44	11·7	70·4	38·4	10·5
109	117	111	Waterloo, Ont.	46·4	22·2	6·8*	IVA	78·0	42	10·3	69·8	35·8	10·5
109	98	99	Cape Breton, N.S.	55·5	22·4*	4·5	IA	79·6	36	10·0	69·5	30·1	9·4
108	123	112	Ontario, Ont.	44·0	22·5*	7·6	IVB	75·4	47	13·0	69·4	37·6	10·6
108	108	104	Division No. 3, Man.	50·9*	22·4*	5·7	IIIA	57·4	28	7·3	69·2	32·9	9·9
106	90	100	Division No. 13, Alta.	56·1	21·6	3·6	IA	48·3	17	11·7	68·1	27·5	9·5
106	125	107	Halton, Ont.	44·1	23·4	8·1	IVB	72·3	49	9·8	67·8	38·2	10·2
105	92	105	Division No. 17, Alta.	52·7*	20·9	3·9	IA	59·6	25	10·0	67·4	28·0	10·0
105	128	107	Middlesex, Ont.	42·3	23·5	8·6	IVB	75·8	45	12·8	67·3	39·3	10·2
105	08	98	Division No. 15, Man.	54·0	22·6*	4·8	IB	46·6	20	6·7	67·0	29·9	9·3
104	91	97	Division No. 10, Sask.	56·2	22·2	3·9	IA	48·8	18	6·7	66·8	27·7	9·2
104	114	103	St. John, N.B.	46·9	23·0	6·9	IVB	82·8	48	15·0	66·3	34·8	9·8
103	78	107	Temiskaming, Que.	52·2*	19·0	2·4	IA	67·9	22	10·4	65·6	23·9	10·2
102	102	97	Division No. 11, Man.	51·0*	22·7*	5·5	IIIB	56·5	27	7·2	65·4	31·1	9·2
102	106	101	Division No. 4, Man.	48·4	22·6*	6·1*	IIIB	51·5	28	5·7	65·3	32·5	9·6
101	103	100	Rainy River, Ont.	49·4	22·6*	5·8*	IIIB	52·2	23	9·7	64·9	31·6	9·5
101	105	100	Division No. 8, Man.	48·6	22·8	6·1*	IIIB	51·6	29	7·7	64·4	32·2	9·5
100	88	97	Division No. 5, Man.	53·8	21·9	4·0	IA	53·9	24	6·7	63·9	27·0	9·2
100	111	101	Division No. 7, Man.	45·9	23·0	6·9	IVB	51·0	27	8·9	63·7	33·9	9·6
99	103	100	Carleton, Ont.	48·5	22·6*	5·9*	IIIB	70·2	37	11·9	63·6	31·4	9·5
98	74	103	District of Patricia, Ont.	52·6*	19·4	2·3	IA	80·8	–	–	62·8	22·6	9·8
06	02	93	Chambly, Que.	52·1*	22·7*	4·8	IB	79·0	43	9·1	61·5	28·0	8·8
94	94	95	Algoma, Ont.	48·9	22·4*	5·3	IIIA	69·5	29	10·1	60·4	28·9	9·0
94	89	03	Division No. 1, Sask.	51·5*	22·4*	4·6	IA	44·6	21	6·7	60·2	27·2	8·8
91	78	92	Division No. 14, Alta.	52·3*	21·5	3·5	IA	40·5	16	7·2	58·2	23·8	8·7
91	74	90	Sudbury, Ont.	49·6	19·9	3·0	IIIA	61·3	21	10·7	58·1	22·7	9·4
90	102	96	Lincoln, Ont.	44·5	23·1	6·7*	IVB	66·9	44	10·1	57·5	31·2	9·1
89	89	92	Division No. 8, Alta.	48·8	22·4*	5·0	IIIA	42·4	21	8·9	57·2	27·1	8·7
89	83	98	Essex, Ont.	47·1	20·9	4·3	IIIA	65·2	35	9·1	57·0	25·4	9·3
87	74	88	Division No. 14, Sask.	51·6*	21·5	3·4	IA	39·5	16	7·0	55·5	22·5	8·4
85	72	87	Division No. 16, Sask.	51·1*	21·5	3·4	IIIA	42·4	18	8·2	54·3	22·1	8·3
85	84	95	Welland, Ont.	45·1	21·4	4·9	IIIA	59·4	39	9·9	54·1	25·8	9·0
84	71	05	Division No. 16, Man.	48·1	20·2	3·2	IIIA	54·2	19	10·0	54·0	21·7	0·0
84	81	86	Division No. 9, Man.	49·9	22·7*	4·6	IIIB	51·3	26	8·8	53·9	24·9	8·2
83	74	93	Montreal Island, Que.	48·2	21·0	3·7	IIIA	74·9	31	12·2[3]	53·4	22·5	8·8
83	68	83	Division No. 3, Sask.	53·6	22·0	3·0	IA	44·0	17	6·1	53·0	20·7	7·9
81	69	86	Division No. 6, Sask.	50·3*	21·4	3·3	IIIA	45·2	20	6·0	51·9	21·1	8·2
81	65	89	Division No. 15, Alta.	49·9	20·6	2·8	IIIA	35·2	14	10·0	51·0	19·9	8·5
81	71	85	Division No. 17, Sask.	50·5*	21·9	3·6	IIIA	40·7	17	8·2	51·6	21·8	8·1
90	71	81	Division No. 2, Sask.	51·5*	22·5*	3·7	IB	43·6	19	8·0	50·9	21·6	7·7
67	83	91	Wentworth, Ont.	44·0	22·0	5·3	IIIA	59·4	38	10·9	50·8	25·5	8·6
89	73	85	Division No. 1, Alta.	49·1	22·1	4·0	IIIA	38·0	20	7·7	50·6	22·2	8·1
77	61	81	Division No. 13, Sask.	52·2*	21·8	2·8	IA	41·8	18	5·7	49·1	18·8	7·7
76	70	80	Division No. 7, Alta.	50·3*	22·6*	3·9	IIIB	38·6	18	7·1	48·9	21·4	7·6
75	59	80	Division No. 8, Sask.	52·0*	21·6	2·6	IA	40·3	17	5·5	48·0	18·1	7·6
75	69	83	Division No. 11, Alta.	47·8	21·9	3·9	IIIA	38·3	19	8·0	47·7	21·1	7·9
75	66	78	Division No. 12, Sask.	50·5*	22·3*	3·5	IIIA	42·0	19	6·4	47·7	20·1	7·4
74	64	82	Division No. 3, Alta.	48·4	21·5	3·4	IIIA	32·1	19	5·0	47·4	19·7	7·8
73	75	87	York, Ont.	43·6	21·6	4·7	IIIA	58·9	31	10·1	46·9	22·8	8·3
72	60	86	Timiskaming, Ont.	47·0	20·5	2·9	IIIA	58·2	19	8·9	46·3	18·3	8·2
72	66	83	Kenora, Ont.	46·3	21·5	3·8	IIIA	50·7	26	8·8	45·8	20·1	7·9
71	62	70	Division No. 4, Sask.	49·1	22·0	3·4	IIIA	37·9	18	5·8	45·5	19·0	7·5
70	50	92	Cochrane, Ont.	44·9	18·5	1·8	IIIA	42·2	16	9·9	44·9	15·2	8·7
70	87	80	Division No. 3, B.C.	41·8	23·9	6·7*	IVB	30·2	–	–	44·8	26·7	7·6
70	50	75	Division No. 7, Snsk.	50·8*	22·3*	3·1	IIIA	41·9	19	6·4	44·7	18·0	7·1
70	61	82	Division No. 16, Alta.	46·6	21·1	3·3	IIIA	26·1	13	6·3	44·7	18·6	7·8
79	59	79	Division No. 2, Alta.	48·3	21·6	3·2	IIIA	40·7	21	7·5	44·3	18·2	7·5
69	58	78	Division No. 11, Sask.	49·2	21·8	3·1	IIIA	38·9	18	6·0	44·3	17·9	7·4

TABLE 2a. Age rank of the counties and census divisions of Canada (male population), 1931, as based upon the correlation between age structure and (1) percentage born in the province of residence in 1931, (2) average age of settlement of the area and (3) resident death rate, 1931—Con.

Index[1] of Age Rank as Correlated with			County or Census Division	Age Structure			Age Type	P.C. Born in Province of Residence	Age of Settlement	Death Rate	Age Rank as Calculated on Basis of Correlation with		
(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate		P.C. under 25	Standard Age[2]	P.C. 65 and over					(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate
					years				years				
67	64	79	Division No. 9, Alta.	45·8	22·0	4·0	IIIA	35·2	19	6·5	42·9	19·6	7·5
67	76	82	Division No. 2, B.C.	41·1	22·5*	5·6	IIIB	28·3	–	–	42·7	23·4	7·8
64	59	73	Division No. 5, Alta.	48·0	22·5*	3·6	IIIB	35·0	18	5·8	41·0	18·0	6·9
64	80	79	Division No. 6, B.C.	40·1	23·3	6·3*	IVB	40·0	–	–	40·9	24·5	7·5
63	58	77	Division No. 4, Alta.	45·3	21·8	3·7	IIIA	35·8	19	6·6	40·2	17·9	7·3
63	62	77	Division No. 6, Man.	45·0	22·2	4·1	IIIA	43·1	23	8·2	40·2	19·0	7·3
55	46	75	Thunder Bay, Ont.	45·0	21·0	2·7	IIIA	49·2	22	8·9	35·5	14·0	7·1
54	50	73	Division No. 10, B.C.	42·8	21·3	3·4	IIIA	16·0	–	–	34·5	15·3	6·9
52	79	71	Division No. 5, B.C.	36·8	24·5	7·3	IVB	35·3	–	–	33·5	24·1	6·7
52	45	72	Division No. 12, Alta.	43·6	21·1	2·9	IIIA	27·9	16	7·3	33·3	13·7	6·8
51	48	68	Division No. 6, Alta.	43·9	21·9	3·4	IIIA	32·8	19	8·1	32·9	14·7	6·5
50	66	68	Division No. 8, B.C.	38·9	23·6	5·9*	IIIB	34·0	–	–	31·9	20·3	6·5
40	55	61	Division No. 4, B.C.	38·3	23·6	5·4	IIIB	28·7	–	–	25·5	16·9	5·8
38	41	64	Division No. 1, B.C.	38·9	21·9	3·8	IIIA	28·5	–	–	24·0	12·6	6·1
22	30	57	Division No. 7, B.C.	34·1	21·6	3·8	IIIA	32·5	–	–	14·0	9·1	5·4
15	30	48	Division No. 9, B.C.	33·0	22·8	4·5	IIIB	35·5	–	–	9·3	9·1	4·6

TABLE 2b. Age rank of the counties and census divisions of Canada (female population), 1931, as based upon the correlation between age structure and (1) percentage born in the province of residence in 1931, (2) average age of settlement of the area and (3) resident death rate, 1931

Index[1] of Age Rank as Correlated with			County or Census Division	Age Structure			Age Type	P.C. Born in Province of Residence	Age of Settlement	Death Rate	Age Rank as Calculated on Basis of Correlation with		
(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate		P.C. under 25	Standard Age[2]	P.C. 65 and over					(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate
					years				years				
100	**100**	**100**	**Average (male) of 220 counties and census divisions**	**51·4**	**22·5**	**6·3**	**–**	**75·6**	**38**	**10·8**	**64·0**	**30·6**	**9·5**
183	229	163	Victoria, N.S.	49·1	24·8	13·5	IVB	94·2	52	12·7	117·4	70·2	15·5
176	210	157	Richmond, N.S.	51·6*	24·1	11·8	IIB	96·6	51	13·2	112·4	64·4	14·9
173	216	155	Antigonish, N.S.	49·3	24·9	12·8	IVB	94·7	53	16·2	110·4	66·1	14·7
160	192	141	Inverness, N.S.	53·1	24·8	10·9	IIB	96·5	49	15·1	102·6	58·7	13·4
157	155	136	Kamouraska, Que.	61·8	22·3*	6·5*	IIA	98·7	50	10·5	100·5	47·5	12·9
157	187	144	Shelburne, N.S.	50·3*	23·6	10·5	IVB	96·8	49	12·1	100·2	57·1	13·7
156	155	136	Bonaventure, Que.	61·9	22·4*	6·5*	IIA	96·5	42	10·2	100·1	47·4	12·9
156	155	137	Bellechasse, Que.	61·3	22·2	6·5*	IIA	98·8	47	13·7	99·9	47·3	13·0
156	165	138	Kent, N.B.	58·9	23·2	7·9	IIB	95·4	46	9·4	99·9	50·6	13·1
156	212	151	Prince Edward, Ont.	40·7	24·7	13·8	IVB	89·9	52	12·8	99·6	64·8	14·3
155	189	147	Queens, P.E.I.	47·5	23·3	10·9	IVB	93·1	50	10·0	99·2	57·7	14·0
154	142	138	Charlevoix, Que.	62·6	21·0	5·1	IA	99·1	46	14·3	98·5	43·5	13·1
153	186	141	Kings, P.E.I.	50·5*	24·2	10·7	IVB	93·6	50	8·8	98·2	56·8	13·4
153	151	137	Montmagny, Que.	59·7	21·8	6·4*	IIA	98·8	46	14·0	97·9	46·3	13·0

[1] Base: Average for males of 220 counties and census divisions.
[2] For explanation of this term see page 758.
[3] Death rates for Montreal and Jesus Islands separately are not available.
* Within the field of the true mean (see pp. 766-7 and 769).

TABLE 2b. Age rank of the counties and census divisions of Canada (female population), 1931, as based upon the correlation between age structure and (1) percentage born in the province of residence in 1931, (2) average age of settlement of the area and (3) resident death rate, 1931—Con.

Index[1] of Age Rank as Correlated with			County or Census Division	Age Structure			Age Type	P.C. Born in Province of Residence	Age of Settlement	Death Rate	Age Rank as Calculated on Basis of Correlation with		
(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate		P.C. under 25	Standard Age[2]	P.C. 65 and over					(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate
					years					years			
153	132	133	Frontenac, Que.	66·5	20·9	3·9	IA	97·7	34	12·2	97·6	40·3	12·6
152	133	134	Rimouski, Que.	65·5	21·0	4·2	IA	98·4	43	10·4	97·2	40·8	12·7
151	140	132	Dorchester, Que.	64·2	21·8	5·1	IA	99·4	45	10·9	96·8	42·8	12·5
151	134	132	Témiscounta, Que.	65·2	21·1	4·3	IA	97·0	41	9·1	96·7	40·9	12·5
151	176	141	Albert, N.B.	51·0*	23·3	9·7	IVB	91·3	50	11·1	96·5	53·8	13·4
151	122	131	Lac-St-Jean, Que.	68·5	20·3	2·8	IA	98·2	28	12·1	96·5	37·2	12·4
151	135	131	Beauce, Que.	64·9	21·3	4·5	IA	99·1	42	10·1	96·4	41·3	12·4
150	195	141	Annapolis, N.S.	45·3	24·7	12·2	IVB	92·6	50	13·4	95·9	59·6	13·4
150	179	139	Yarmouth, N.S.	50·3*	23·8	10·2	IVB	94·4	47	11·3	95·9	54·8	13·2
149	123	129	Matane, Que.	67·8	20·6	3·1	IA	97·7	33	12·7	95·4	37·6	12·3
149	177	141	Huntingdon, Que.	49·6	23·4	10·0	IVB	89·3	53	11·6	95·1	54·1	13·4
148	142	134	Montmorency, Que.	60·6	21·6	5·7	IA	98·6	47	11·7	94·8	43·6	12·7
148	118	132	Chicoutimi, Que.	67·0	19·8	2·6	IA	97·1	33	11·1	94·5	36·1	12·5
147	123	135	Division No. 18, Sask.	63·4	19·5	3·3	IA	89·1	27	16·6	94·2	37·7	12·8
147	140	128	Gloucester, N.B.	62·8	22·2	5·5	IA	97·4	41	12·9	94·1	42·9	12·2
147	147	128	Lotbinière, Que.	60·8	22·7*	6·4*	IIB	98·4	49	13·1	94·1	45·0	12·2
146	135	128	Gaspé, Que.	64·0	21·9	4·9	IA	98·9	40	14·1	93·5	41·2	12·2
146	136	129	L'Islet, Que.	63·0	21·7	5·0	IA	98·5	46	10·1	93·5	41·5	12·3
146	153	134	Deux-Montagnes, Que.	56·0	22·3*	7·3	IIA	98·6	53	14·0	93·4	46·9	12·7
146	125	131	Saguenay, Que.	65·1	20·6	3·6	IA	98·4	37	12·0	93·3	38·1	12·4
144	144	132	Joliette, Que.	58·1	21·9	6·3*	IIA	96·5	48	12·8	92·0	44·1	12·5
143	146	129	Yamaska, Que.	58·2	22·4*	6·6*	IIA	98·1	51	13·7	91·5	44·7	12·3
143	164	134	Hants, N.S.	51·6*	23·3	9·0	IIB	93·4	49	10·4	91·2	50·3	12·7
143	121	126	Labelle, Que.	65·2	20·8	3·5	IA	97·7	24	11·2	91·2	37·1	12·0
142	164	134	Châteauguay, Que.	51·5*	23·3	9·0	IIB	95·4	53	13·9	91·0	50·3	12·7
142	167	132	Guysborough, N.S.	51·1*	23·7	9·4	IVB	96·2	48	10·9	91·0	51·1	12·5
141	148	128	Bagot, Que.	57·0	22·8	7·1	IIB	96·9	50	9·6	90·4	45·4	12·2
141	147	128	Pontiac, Que.	57·2	22·6*	6·9	IIB	91·9	45	8·1	90·4	44·9	12·2
141	145	128	Nicolet, Que.	57·6	22·5*	6·7*	IIB	98·3	47	13·3	90·3	44·4	12·2
141	170	133	Glengarry, Ont.	49·7	24·0	9·9	IVB	86·0	50	11·8	90·0	52·0	12·6
140	131	126	Mégantic, Que.	61·5	21·7	5·0	IA	97·5	42	11·7	89·6	40·1	12·0
140	134	125	Arthabaska, Que.	60·8	22·0	5·4	IA	97·5	42	11·3	89·5	41·0	11·9
140	142	125	Russell, Ont.	58·7	22·6*	6·4*	IIB	86·9	40	12·4	89·4	43·3	11·9
140	140	129	Lévis, Que.	57·1	21·8	6·2*	IA	98·6	45	12·8	89·3	42·8	12·3
140	159	129	Prince, P.E.I.	52·5*	23·5	8·7	IIB	94·9	46	11·4	89·3	48·8	12·3
139	168	134	Lunenburg, N.S.	48·7	23·5	9·7	IVB	97·5	45	10·7	89·2	51·3	12·7
139	151	127	Nnpierville, Que.	56·3	23·4	7·6	IIB	97·9	57	13·4	89·1	46·1	12·1
139	147	127	Prescott, Ont.	56·4	22·9	7·2	IIB	86·3	45	11·1	89·1	45·1	12·1
139	168	131	Digby, N.S.	50·2*	24·2	9·8	IVB	94·5	48	12·9	88·9	51·3	12·4
139	116	124	Madawaska, N.B.	65·1	20·7	3·2	IA	84·6	36	11·2	88·7	35·4	11·8
138	119	125	Restigouche, N.B.	64·1	20·9	3·6	IA	77·0	34	9·8	88·6	36·4	11·9
138	103	124	Abitibi, Que.	67·8	19·6	1·6	IA	94·7	16	8·7	88·2	31·5	11·8
138	140	124	Montcalm, Que.	58·6	22·6*	6·3*	IIB	97·5	50	11·1	88·2	42·7	11·8
137	161	132	Kings, N.S.	49·9	23·3	9·1	IVB	91·3	48	9·5	87·9	49·3	12·5
137	130	124	Papineau, Que.	60·7	21·8	5·1	IA	90·5	41	11·1	87·9	39·7	11·8
137	184	136	Lennox, Ont.	42·3	24·5	12·0	IVB	93·0	53	11·3	87·8	56·3	12·9
137	143	132	Vnudreuil, Que.	54·0	21·7	6·8*	IIA	92·0	50	8·3	87·8	43·9	12·5
137	171	132	Addington, Ont.	47·1	24·1	10·4	IVB	95·3	53	16·2	87·5	52·4	12·5
137	130	124	Portneuf, Que.	60·5	21·9	5·2	IA	99·0	45	10·8	87·5	39·8	11·8
136	132	121	Division No. 12, Man.	60·7	22·4*	5·5	IA	64·3	23	8·0	87·3	40·5	11·5
136	129	125	Jesus Island, Que.	59·4	21·5	5·1	IA	96·4	32	11·2[3]	86·8	39·4	11·9
135	146	125	Soulanges, Que.	55·1	22·9	7·3	IIB	94·1	53	10·8	86·7	44·6	11·9
135	184	136	Grenville, Ont.	40·7	24·4	12·2	IVB	90·0	53	9·9	86·4	56·3	12·9
135	134	126	Richmond, Que.	57·8	21·9	5·8*	IA	93·3	40	11·6	86·4	40·9	12·0
135	139	127	Verchères, Que.	55·8	22·0	6·4*	IIA	96·7	52	10·4	86·4	42·4	12·1
135	130	122	Maskinongé, Que.	60·1	22·2	5·4	IA	98·3	49	13·5	86·2	39·9	11·6
134	136	122	Northumberland, N.B.	58·5	22·6*	6·1*	IB	95·5	44	10·8	86·0	41·5	11·6
134	116	122	Chnmplain, Que.	62·9	21·0	3·7	IA	97·6	39	12·5	85·8	35·6	11·6
134	155	129	Queens, N.S.	50·7*	23·2	8·6	IVB	92·9	49	12·4	85·8	47·5	12·3
134	117	121	Division No. 9, Sask.	63·1	21·2	3·8	IA	60·4	21	7·0	85·7	35·8	11·5
133	155	128	Colchester, N.S.	50·4*	23·3	8·7	IVB	90·6	48	10·8	85·4	47·5	12·2
133	122	122	Drummond, Que.	60·7	21·2	4·4	IA	94·4	41	13·4	85·4	37·2	11·6
133	133	125	Laprairie, Que.	57·0	21·9	5·9*	IA	96·2	52	11·2	85·4	40·8	11·9
133	140	124	L'Assomption, Que.	55·6	22·6*	6·8*	IIB	97·6	52	14·7	85·3	42·9	11·8
133	123	117	Wolfe, Que.	63·2	22·4*	4·6	IA	97·4	40	10·0	85·0	37·5	11·1
132	109	121	Division No. 13, Alta.	63·7	20·4	2·9	IA	57·0	17	9·3	84·6	33·3	11·5
132	145	125	Rouville, Que.	53·2	22·8	7·5	IIB	95·0	54	10·4	84·6	44·4	11·9
132	116	123	District of Patricia, Ont.	60·9	20·6	3·8	IA	95·9	–	–	84·5	35·5	11·7
132	112	116	Division No. 1, Man.	64·9	21·5	3·4	IA	69·7	26	7·8	84·4	34·3	11·0
132	176	133	Northumberland, Ont.	42·0	24·2	11·5	IVB	87·4	52	15·4	84·3	53·9	12·6
132	134	121	Berthier, Que.	57·2	22·4*	6·1*	IA	97·1	50	12·8	84·2	40·9	11·5
131	116	123	Division No. 2, Man.	60·9	20·8	3·9	IA	72·7	30	7·3	84·1	35·6	11·7
131	100	121	Temiskaming, Que.	65·4	19·6	1·8	IA	77·3	22	9·1	84·0	30·5	11·5

TABLE 2b. Age rank of the counties and census divisions of Canada (female population), 1931, as based upon the correlation between age structure and (1) percentage born in the province of residence in 1931, (2) average age of settlement of the area and (3) resident death rate, 1931—Con.

Index[1] of Age Rank as Correlated with			County or Census Division	Age Structure			Age Type	P.C. Born in Province of Residence	Age of Settlement	Death Rate	Age Rank as Calculated on Basis of Correlation with		
(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate		P.C. under 25	Standard Age[2]	P.C. 65 and over					(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate
					years				years				
131	150	124	Queens, N.B.	51·6*	23·4	8·3	IIB	88·0	52	9·0	83·8	45·9	11·8
131	145	129	St-Hyacinthe, Que.	50·4*	22·1	7·6	IVA	95·5	48	12·6	83·6	44·3	12·3
130	155	128	Pictou, N.S.	48·6	23·2	8·9	IVB	86·5	47	11·5	83·4	47·3	12·2
130	164	132	Norfolk, Ont.	44·3	23·3	10·1	IVB	80·2	50	12·9	83·2	50·2	12·5
130	133	124	Richelieu, Que.	55·4	21·9	6·1*	IA	96·9	50	13·5	83·2	40·6	11·8
130	117	118	Victoria, N.B.	62·1	21·6	4·1	IA	84·6	37	10·0	83·2	35·8	11·2
130	137	126	Westmorland, N.B.	53·4	22·0	6·7*	IIA	86·7	42	8·6	83·2	41·9	12·0
129	132	119	Compton, Que.	57·4	22·8	6·2*	IB	92·0	41	8·7	82·8	40·5	11·3
129	136	122	Argenteuil, Que.	54·6	22·5*	6·7*	IIB	89·4	47	9·8	82·7	41·7	11·6
129	174	131	Durham, Ont.	41·3	24·2	11·5	IVB	85·1	54	12·2	82·5	53·3	12·4
129	142	124	Stormont, Ont.	51·9*	22·5*	7·4	IIB	83·8	45	12·8	82·5	43·4	11·8
129	133	120	Iberville, Que.	56·3	22·6*	6·3*	IIB	95·1	56	11·0	82·3	40·6	11·4
129	131	122	Shefford, Que.	56·3	22·2	6·0*	IA	95·1	45	10·5	82·3	40·0	11·6
128	167	128	Bruce, Ont.	44·2	24·2	10·7	IVB	93·2	45	10·3	82·2	51·2	12·2
128	108	119	Division No. 15, Sask.	62·6	20·6	3·1	IA	59·1	20	7·1	82·1	33·0	11·3
128	119	120	Hull, Que.	59·0	21·2	4·5	IA	87·3	38	11·8	82·1	36·3	11·4
128	108	117	Division No. 10, Alta.	62·9	20·9	3·2	IA	55·0	19	5·9	81·6	33·0	11·1
127	146	122	Carleton, N.B.	51·3*	23·4	8·1	IVB	87·6	47	10·2	81·2	44·6	11·6
127	116	117	Division No. 14, Man.	60·5	21·6	4·3	IA	63·7	23	6·2	81·0	35·4	11·1
126	156	123	Kings, N.B.	47·7	23·9	9·4	IVB	87·6	51	11·2	80·8	47·6	11·7
126	120	119	Terrebonne, Que.	58·4	21·7	4·9	IA	95·7	43	10·6	80·8	36·8	11·3
126	130	119	Haliburton, Ont.	55·3	22·4*	6·2*	IA	92·9	38	12·7	80·4	39·7	11·3
125	137	121	Missisquoi, Que.	52·1*	22·5*	7·1	IIB	90·4	49	10·4	80·1	41·9	11·5
125	153	122	Charlotte, N.B.	47·5	23·7	9·2	IVB	87·2	51	11·2	79·9	46·7	11·6
125	143	122	Cumberland, N.S.	50·7*	23·1	7·9	IVB	84·8	43	11·9	79·8	43·7	11·6
125	117	118	Division No. 5, Sask.	58·9	21·6	4·6	IA	58·6	22	7·5	79·8	35·8	11·2
125	150	124	Hastings, Ont.	47·8	23·3	8·8	IVB	89·9	47	11·2	79·7	45·8	11·8
124	107	114	Division No. 10, Sask.	62·2	21·2	3·4	IA	55·2	18	7·3	79·6	32·7	10·8
124	163	125	Dundas, Ont.	43·8	24·3	10·6	IVB	92·4	50	11·7	79·6	49·9	11·9
124	106	117	Division No. 16, Man.	60·8	20·6	3·3	IA	70·7	19	9·6	79·5	32·5	11·1
124	167	127	Leeds, Ont.	41·6	24·2	11·1	IVB	87·4	50	12·3	79·5	51·2	12:1
124	136	120	Renfrew, Ont.	52·7*	22·8	7·1	IIB	88·9	41	11·4	79·4	41·6	11·4
124	128	117	Sunbury, N.B.	55·5	22·6*	6·2*	IB	88·8	50	12·5	79·4	39·3	11·1
123	119	116	Cape Breton, N.S.	58·2	22·0	5·0	IA	81·8	36	10·0	79·0	36·4	11·0
123	175	125	Huron, Ont.	40·5	25·2	12·1	IVB	93·0	48	11·7	79·0	53·4	11·9
123	116	115	Division No. 13, Man.	59·5	22·1	4·7	IA	63·4	22	7·3	78·8	35·5	10·9
123	159	125	Haldimand, Ont.	43·5	23·8	10·2	IVB	88·9	51	11·7	78·6	48·8	11·9
123	109	116	Nipissing, Ont.	60·0	21·1	3·8	IA	78·6	26	6·9	78·6	33·4	11·0
122	122	120	Quebec, Que.	54·1	21·2	5·4	IA	96·7	43	14·1	78·2	37·2	11·4
122	91	122	Cochrane, Ont.	60·4	18·3	1·5	IA	54·1	16	8·6	77·9	27·9	11·6
122	105	116	St-Maurice, Que.	59·8	20·6	3·4	IA	95·4	38	12·7	77·9	32·2	11·0
121	122	120	St-Jean, Que.	53·7	21·3	5·5	IA	92·6	50	9·8	77·5	37·2	11·4
121	146	119	Brome, Que.	48·7	23·8	8·7	IVB	87·8	50	9·8	77·4	44·7	11·3
120	136	119	York, N.B.	50·6*	22·8	7·4	IVB	91·4	47	10·2	77·0	41·5	11·3
119	118	118	Beauharnois, Que.	54·4	21·3	5·2	IA	89·1	45	9·5	76·4	36·0	11·2
119	127	115	Stanstead, Que.	53·8	22·7*	6·4*	IIB	89·3	43	7·7	76·2	38·8	10·9
119	95	116	Sudbury, Ont.	60·6	19·8	2·4	IA	71·4	21	9·0	76·2	29·2	11·0
119	92	115	Division No. 15, Alta.	61·8	19·7	2·0	IA	46·3	14	9·2	76·1	28·3	10·9
119	155	121	Grey, Ont.	44·1	24·1	10·0	IVB	92·5	45	11·2	76·0	47·4	11·5
118	159	122	Victoria, Ont.	42·3	24·3	10·6	IVB	92·3	47	11·8	75·7	48·6	11·6
118	162	123	Elgin, Ont.	40·3	24·3	11·1	IVB	82·9	47	10·4	75·4	49·7	11·7
118	158	122	Oxford, Ont.	41·8	23·9	10·4	IVB	84·1	49	12·2	75·4	48·2	11·6
117	96	112	Division No. 14, Alta.	61·7	20·6	2·6	IA	50·4	16	8·0	75·1	29·3	10·6
117	117	112	Parry Sound, Ont.	56·0	22·3*	5·4	IA	88·4	33	8·6	75·0	35·9	10·6
117	154	121	Lanark, Ont.	43·1	23·9	10·0	IVB	90·4	49	11·2	74·9	47·0	11·5
117	152	122	Wellington, Ont.	43·0	23·6	9·8	IVB	83·9	47	11·2	74·9	46·5	11·6
116	93	111	Division No. 17, Alta.	61·6	20·4	2·4	IA	76·0	25	12·9	74·3	28·5	10·5
116	125	118	Halifax, N.S.	50·4*	21·8	6·4*	IVA	85·2	43	11·8	74·2	38·1	11·2
116	124	113	Manitoulin, Ont.	53·4	22·7*	6·3*	IIB	95·9	35	8·6	74·2	37·8	10·7
114	92	109	Division No. 3, Sask.	60·8	20·3	2·4	IA	51·0	17	4·2	73·0	28·1	10·4
114	128	115	Muskoka, Ont.	50·2*	22·7*	7·0	IVB	84·5	34	9·1	72·9	39·1	10·9
114	92	114	Division No. 16, Alta.	59·0	19·7	2·4	IA	34·6	13	7·0	72·8	28·1	10·8
113	149	118	Perth, Ont.	43·2	24·0	9·8	IVB	88·2	46	13·4	72·5	45·6	11·2
113	151	119	Dufferin, Ont.	42·4	24·0	10·0	IVB	92·6	46	12·1	72·4	46·1	11·3
113	102	111	Rainy River, Ont.	57·8	21·2	3·8	IA	57·2	23	7·1	72·2	31·1	10·5
112	91	109	Division No. 8, Sask.	60·4	20·3	2·4	IA	48·1	17	5·4	71·9	27·8	10·4
112	142	118	Frontenac, Ont.	44·3	23·4	9·0	IVB	83·9	48	10·6	71·9	43·6	11·2
112	112	107	Division No. 10, Man.	56·0	22·5*	5·2	IB	61·1	27	8·1	71·7	34·2	10·2
112	96	108	Division No. 16, Sask.	59·2	21·0	3·2	IA	51·3	18	8·7	71·5	29·4	10·5
111	92	108	Division No. 13, Sask.	60·1	20·7	2·7	IA	49·9	18	5·9	71·2	28·2	10·3
111	108	111	Algoma, Ont.	55·1	21·6	4·7	IA	75·8	29	8·5	71·1	33·0	10·3
111	100	107	Division No. 15, Man.	58·2	21·5	3·8	IA	50·3	20	6·7	71·1	30·7	10·2
111	139	114	Simcoe, Ont.	45·9	23·7	8·7	IVB	89·1	43	11·1	71·0	42·4	10·8

TABLE 2b. Age rank of the counties and census divisions of Canada (female population), 1931, as based upon the correlation between age structure and (1) percentage born in the province of residence in 1931, (2) average age of settlement of the area and (3) resident death rate, 1931—Con.

Index[1] of Ago Rank as Correlated with			County or Census Division	Age Structure			Age Type	P.C. Born in Province of Residence	Ago of Settlement	Death Rate	Age Rank as Calculated on Basis of Correlation with		
(1) P.C. Born in Province of Residence	(2) Ago of Settlement	(3) Death Rate		P.C. under 25	Standard Age[2]	P.C. 65 and over					(1) P.C. Born in Province of Residence	(2) Age of Settlement	(3) Death Rate
				years					years				
111	133	115	Kent, Ont.	46·8	23·1	8·0	IVB	81·3	43	10·6	70·9	40·8	10·9
110	89	106	Division No. 14, Sask.	61·0	20·7	2·4	IA	48·2	16	5·4	70·6	27·2	10·1
110	110	113	Sherbrooke, Que.	52·7*	21·4	5·1	IA	89·3	35	11·7	70·4	33·7	10·7
110	141	115	Lambton, Ont.	43·8	23·6	9·1	IVB	85·5	43	12·0	70·2	43·1	10·9
109	133	116	Ontario, Ont.	44·8	22·7*	8·1	IVB	78·8	47	11·9	69·7	40·7	11·0
108	95	105	Division No. 5, Man.	58·2	21·2	3·4	IA	57·6	24	6·0	69·4	29·2	10·0
108	100	107	Division No. 11, Man.	55·0	22·0	4·8	IA	62·2	27	7·6	69·0	32·4	10·2
106	106	107	Division No. 3, Man.	54·2	22·0	4·9	IA	62·3	28	6·8	67·9	32·3	10·2
106	89	106	Division No. 4, Sask.	58·5	20·6	2·7	IA	46·5	18	5·2	67·8	27·1	10·1
106	126	113	St. John, N.B.	45·7	22·5*	7·5	IVB	83·8	48	13·5	67·7	38·5	10·7
106	131	109	Peterborough, Ont.	45·9	23·5	8·2	IVB	84·8	43	10·9	67·6	40·1	10·4
104	89	102	Division No. 17, Sask.	58·7	21·2	3·0	IA	49·3	17	6·0	66·8	27·3	9·7
104	95	102	Division No. 1, Sask.	57·2	21·8	3·8	IA	50·4	21	7·0	66·4	29·0	9·7
104	92	102	Division No. 7, Alta.	57·5	21·4	3·4	IA	45·8	18	6·9	66·3	28·1	9·7
103	139	113	Middlesex, Ont.	40·8	23·5	9·4	IVB	78·0	45	11·9	66·2	42·6	10·7
103	122	111	Waterloo, Ont.	45·7	22·5*	7·3	IVB	80·5	42	8·0	65·8	37·3	10·5
103	131	109	Brant, Ont.	44·0	23·5	8·5	IVB	75·2	44	11·1	65·7	40·2	10·4
103	131	112	Peel, Ont.	43·2	23·2	8·5	IVB	78·2	51	7·8	65·7	40·2	10·6
102	84	104	Timiskaming, Ont.	57·4	20·3	2·5	IA	67·0	19	7·3	65·3	25·7	9·9
101	96	103	Division No. 8, Alta.	54·8	21·7	4·2	IA	48·5	21	8·1	64·9	29·5	9·8
101	89	105	Division No. 6, Sask.	55·4	20·6	3·2	IA	50·3	20	5·8	64·7	27·1	10·0
101	105	105	Chambly, Que.	51·4*	22·0	5·3	IA	79·9	43	8·1	64·6	32·1	10·0
100	86	09	Division No. 2, Sask.	58·5	21·5	3·0	IA	50·4	19	6·0	64·2	26·4	9·4
100	90	102	Division No. 9, Alta.	55·4	21·1	3·5	IA	43·7	19	4·7	64·0	27·6	9·7
99	113	108	Carleton, Ont.	46·4	22·0	6·5*	IVA	71·2	37	10·8	63·5	34·6	10·3
99	90	99	Division No. 1, Alta.	56·6	21·6	3·5	IA	44·1	20	8·0	63·4	27·4	9·4
99	128	108	Halton, Ont.	42·8	23·4	8·5	IVB	75·4	49	9·3	63·3	39·3	10·3
99	00	101	Kenora, Ont.	55·1	21·1	3·5	IA	59·1	26	8·1	63·2	27·4	9·6
98	85	101	Division No. 2, Alta.	56·6	21·0	3·0	IA	47·8	21	6·3	63·0	26·0	9·6
98	79	100	Division No. 3, Alta.	58·5	20·6	2·2	IA	42·1	19	6·3	63·0	24·2	9·5
98	87	99	Division No. 12, Sask.	56·6	21·4	3·3	IA	48·5	19	6·6	63·0	26·7	9·4
98	76	102	Division No. 12, Alta.	57·0	19·9	2·0	IA	39·7	16	7·3	62·4	23·4	9·7
97	107	102	Division No. 7, Man.	40·9	22·6*	5·9*	IIIB	56·0	27	8·2	62·2	32·6	9·7
97	105	101	Division No. 8, Man.	51·3*	22·7*	5·6	IIIB	56·7	29	7·4	62·2	32·0	9·6
97	104	105	Welland, Ont.	48·4	21·6	5·5	IIIA	64·8	39	10·0	61·8	31·7	10·0
96	84	101	Division No. 11, Sask.	55·4	20·9	3·1	IA	44·3	18	5·2	61·6	25·8	9·6
96	84	98	Division No. 7, Sask.	56·5	21·3	3·1	IA	47·3	19	5·6	61·5	25·8	9·3
96	95	106	Essex, Ont.	49·7	20·8	4·5	IIIA	68·4	35	8·0	61·4	29·2	10·1
95	81	08	Division No. 5, Alta.	57·3	21·1	2·7	IA	42·8	18	5·4	61·1	24·7	9·3
95	95	101	Division No. 9, Man.	52·1*	21·8	4·6	IA	53·9	26	6·7	61·1	29·2	9·6
94	87	100	Division No. 11, Alta.	53·6	21·1	3·6	IA	42·8	19	5·8	60·4	26·6	9·5
94	116	105	Lincoln, Ont.	44·0	22·8	7·4	IVB	69·0	44	9·1	60·2	35·6	10·0
03	71	97	Division No. 10, B.C.	58·3	20·4	1·7	IA	25·8	–	–	59·2	21·6	9·2
92	97	97	Division No. 4, Man.	51·0*	22·5*	5·2	IIIB	56·4	28	5·0	59·0	29·8	9·2
90	89	102	Montreal Island, Que.	49·3	20·9	4·3	IIIA	77·0	32	11·2[3]	57·6	27·3	9·7
89	76	98	Thunder Bay, Ont.	54·2	20·6	2·7	IA	58·3	22	6·8	56·9	23·3	9·3
89	91	97	Division No. 6, B.C.	51·0*	22·0	4·6	IIIA	54·8	–	–	56·8	27·7	9·2
87	77	93	Division No. 4, Alta.	54·6	21·3	3·0	IA	44·6	19	4·8	55·7	23·5	8·8
86	102	101	Wentworth, Ont.	44·2	22·1	6·3*	IVA	63·0	38	9·5	55·2	31·2	9·6
84	74	91	Division No. 8, B.C.	54·8	21·5	2·9	IA	49·6	–	–	53·9	22·5	8·6
84	84	93	Division No. 2, B.C.	50·9*	22·0	4·3	IIIA	36·2	–	–	53·6	25·8	8·8
82	90	91	Division No. 3, B.C.	49·4	22·8	5·2	IIIB	36·9	–	–	52·7	27·6	8·6
81	80	94	Division No. 6, Man.	49·3	21·3	4·0	IIIA	47·6	23	6·4	51·9	24·6	8·9
80	68	96	Division No. 7, B.C.	50·5*	19·8	2·5	IIIA	49·5	–	–	51·4	20·0	9·1
79	69	01	Division No. 9, B.C.	52·6*	20·9	2·7	IA	56·0	–	–	50·6	21·0	8·6
75	64	84	Division No. 1, B.C.	53·5	21·3	2·5	IA	40·0	–	–	48·1	19·6	8·0
75	71	88	Division No. 6, Alta.	50·1*	21·3	3·4	IIIA	37·5	19	6·5	48·1	21·8	8·4
75	98	89	Division No. 5, B.C.	43·1	23·5	6·9	IVB	41·6	–	–	48·0	30·1	8·5
75	88	95	York, Ont.	42·8	21·7	5·6	IIIA	61·8	31	8·9	47·8	27·0	9·0
65	78	83	Division No. 4, B.C.	44·2	22·5*	5·2	IIIB	33·0	–	–	41·7	23·8	7·9

TABLE 3. Cities of 5,000 population and over classified according to the age group containing maximum population, and showing secondary peaks, for (a) total population, (b) male population and (c) female population, 1931

Class	City
	(A) TOTAL POPULATION
I—Maximum in age group 0-4—	
A—Follows natural curve	Chicoutimi, Que.[1]
	Joliette, Que.
	Shawinigan Falls, Que.[1]
	Thetford Mines, Que.[1]
B—Peak at 15-24	Granby, Que.
	Quebec, Que.[1]
	Valleyfield, Que.[1]
C—Peak at 20-24	Trois-Rivières, Que.[1] (small).
D—Peak at 15-34	Sudbury, Ont.
E—Peak at 20-34	Oshawa, Ont.[1]
	Verdun, Que.[1]
II—Maximum in age group 5-9—	
A—Follows natural curve	Cap-de-la-Madeleine, Que.
	Grand'Mère, Que.[1]
	Hull, Que.[1]
	Laehine, Que.
	Lévis, Que.
	Longueuil, Que.
	Prince Albert, Sask.
	Rivière-du-Loup, Que.[1] (also small peak at 35-39).
	St. Boniface, Man.
	Welland, Ont.
B—Peak at 15-19	Belleville, Ont. (also small peak at 35-39).
	Hamilton, Ont. (decrease from 20 to 49 is very slow).
	Sorel, Que.[1]
	Stratford, Ont. (small).
C—Peak at 15-24	Charlottetown and Royalty, P.E.I. (also small peak at 35-39)
	Guelph, Ont.
	Montreal, Que.
	St-Jean, Que. (small).
	Sherbrooke, Que.
D—Peaks at 15-19 and 30-34	Niagara Falls, Ont.[1]
E—Peaks at 20-24 and 30-34	Moncton, N.B.
F—Peak at 25-39	East Windsor, Ont.[1]
	Windsor, Ont.[1]
G—Peak at 30-34	Sarnia, Ont.[1]
H—Peak at 35-39	Fort William, Ont.[1]
	North Bay, Ont.[1]
	St-Lambert, Que.
	St. Thomas, Ont.
	Saint John, N.B.
I—Peak at 35-44	Sydney, N.S.
III—Maximum in age group 10-14—	
A—Peak at 35-44	St. Catharines, Ont.[1]
	Sault Ste. Marie, Ont.[1]
B—Peak at 35-49	Portage la Prairie, Man.
	Swift Current, Sask.[1]
C—Peak at 40-49	Brandon, Man.
IV—Maximum in age group 15-19—	
A—Follows natural curve	Brantford, Ont.[1]
	Galt, Ont.[1]
	Lethbridge, Alta.
	Peterborough, Ont.[1]
	Port Arthur, Ont.[1]
	Yorkton, Sask[1].
B—Dip at 10-14	Chatham, Ont.
C—Peak at 5-9	St-Hyacinthe, Que.[1]
	Ottawa, Ont. (also small peak at 35-44).
	Owen Sound, Ont. (also small peak at 35-39).
D—Peak at 35-39	Fredericton, N.B.
E—Peak at 35-44	Edmonton, Alta.
	Saskatoon, Sask.
F—Peak at 35-49	Calgary, Alta.
	Medicine Hat, Alta.
	Moose Jaw, Sask.
	New Westminster, B.C.[1]
	North Battleford, Sask.
	Vancouver, B.C.
	Weyburn, Sask.
	Winnipeg, Man.
G—Peak at 40-49	Kamloops, B.C.[1]
	Nelson, B.C.[1]
H—Peak at 30-54	North Vancouver, B.C.
I—Peak at 30-59	Victoria, B.C.
Other	Nanaimo, B.C.[1] (very erratic—peaks at 5-9, 25-29, 35-39 and 45-49).

[1] Mode in the same class for male population as for female population.
[2] Population the same at age groups 5-9 and 10-14.

TABLE 3. Cities of 5,000 population and over classified according to the age group containing maximum population, and showing secondary peaks, for (a) total population, (b) male population and (c) female population, 1931—Con.

Class	City
(A) TOTAL POPULATION—Con.	
V—Maximum in age group 20-24—	
A—Follows natural curve	Regina, Sask.
B—Peak at 5-9	Halifax, N.S.
	Kitchener, Ont.
	Woodstock, Ont.[1]
C—Peaks at 5-9 and 35-39	Kingston, Ont.
	London, Ont.
	Toronto, Ont.[1]
D—Peak at 35-44	Outremont, Que.[1]
E—Peak at 40-49	Westmount, Que.
VI—Maximum in age group 25-29—	
A—Peak at 0-4	Trail, B.C.
VII—Maximum in age group 40-44—	
A—Peak at 5-9	Prince Rupert, B.C (also peaks at 15-19 and 25-39).
(B) MALE POPULATION	
I—Maximum in age group 0-4—	
A—Follows natural curve	Cap-de-la-Madeleine, Que.
	Chicoutimi, Que.
	Joliette, Que.
	Quebec, Que.
	Thetford Mines, Que.
B—Peak at 15-24	Granby, Que.
	Valleyfield, Que.
C—Peak at 20-24	Trois-Rivières, Que.
D—Peak at 20-34	Verdun, Que.
E—Peak at 25-29	Shawinigan Falls, Que.
F—Peak at 25-39	Oshawa, Ont.
Other	Regina, Sask. (peaks at 10-19, 25-29 and 40-44).
II—Maximum in age group 5-9—	
A—Follows natural curve	Grand'Mère, Que.[2]
	Rivière-du-Loup, Que.
B—Peak at 15-19	Sorel, Que.
C—Peaks at 15-19 and 35-39	Guelph, Ont.
	London, Ont.
	Ottawa, Ont.
D—Peaks at 15-19 and 30-34	Niagara Falls, Ont.
	Stratford, Ont.
	Welland, Ont.
E—Peaks at 15-19 and 45-49	Owen Sound, Ont.
F—Peaks at 20-24 and 35-39	Halifax, N.S.
G—Peaks at 20-24 and 30-34	Sarnia, Ont.
H—Peak at 20-34	Kitchener, Ont.
I—Dip at 25-29	Chatham, Ont.
	Hull, Que.
J—Peak at 25-29	Montreal, Que.
K—Peak at 25-34	Hamilton, Ont.
L—Peak at 25-44	East Windsor, Ont.
M—Peak at 25-49	Fort William, Ont.
N—Peaks at 25-29 and 35-39	North Bay, Ont.
O—Peak at 30-34	Windsor, Ont.
P—Peak at 35-39	Belleville, Ont.
	Charlottetown and Royalty, P.E.I.
	Lachine, Que.
	Moncton, N.B.
	Saint John, N.B.
	Sydney, N.S.
Q—Peak at 40-44	St. Boniface, Man.
	St-Lambert, Que.
R—Peak at 45-49	Sherbrooke, Que.
III—Maximum in age group 10-14—	
A—Follows natural curve	Grand'Mère, Que.[2]
	Lévis, Que.
B—Peaks at 25-29 and 40-44	Lethbridge, Alta.
	Saskatoon, Sask.
	Swift Current, Sask.
C—Peak at 30-39	Fredericton, N.B.
D—Peak at 30-54	Portage la Prairie, Man.
	St. Thomas, Ont.
E—Peaks at 30-34 and 40-44	St. Catharines, Ont.
F—Peak at 35-44	Sault Ste. Marie, Ont.

TABLE 3. Cities of 5,000 population and over classified according to the age group containing maximum population, and showing secondary peaks, for (a) total population, male population and (c) female population, 1931—Con.

Class	City
(B) MALE POPULATION—Con.	
III—Maximum in age group 10-14—Con.	
G—Peak at 35-49	Brandon, Man.
	Edmonton, Alta.
	Medicine Hat, Alta.
	Moose Jaw, Sask.
	North Vancouver, B.C.
H—Peak at 40-44	Longueuil, Que.
IV—Maximum in age group 15-19—	
A—Follows natural curve	St-Hyacinthe, Que.
B—Peak at 0-4	St-Jean, Que.
C—Peaks at 5-9 and 45-49	New Westminister, B.C.
D—Peaks at 5-9 and 30-34	Port Arthur, Ont.
E—Peaks at 5-9, 35-39 and 45-49	Galt, Ont.
F—Peaks at 25-29 and 40-44	Calgary, Alta.
	Nanaimo, B.C.
G—Peak at 35-39	Peterborough, Ont.
H—Peak at 40-44	Brantford, Ont.
	Winnipeg, Man.
	Yorkton, Sask.
I—Peak at 45-49	Kamloops, B.C.
	Nelson, B.C.
	Westmount, Que.
V—Maximum in age group 20-24—	
A—Peak at 5-9	Kingston, Ont.
	Woodstock, Ont.
B—Peak at 35-39	Toronto, Ont.
C—Peak at 35-49	Outremont, Que.
VI—Maximum in age group 25-29—	
A—Peak at 0-4	Sudbury, Ont.
	Trail, B.C.
B—Peaks at 5-9 and 40-44	Prince Albert, Sask.
VII—Maximum in age group 40-44—	
A—Peak at 15-19	Weyburn, Sask.
VIII—Maximum in age group 45-49—	
A—Peak at 15-19	Vancouver, B.C.
	Victoria, B.C.
B—Peaks at 5-9 and 25-29	Prince Rupert, B.C.
C—Peaks at 10-14 and 25-29	North Battleford, Sask.
(C) FEMALE POPULATION	
I—Maximum in age group 0-4—	
A—Follows natural curve	Chicoutimi, Que.
	Shawinigan Falls, Que.
	Thetford Mines, Que.
B—Peak at 15-19	Valleyfield, Que.
C—Peak at 15-24	Quebec, Que.
	Sudbury, Ont.
	Trois-Rivières, Que.
D—Peak at 15-29	Trail, B.C.
	Verdun, Que.
E—Peak at 20-34	Oshawa, Ont.
II—Maximum in age group 5-9—	
A—Follows natural curve	Cap-de-la-Madeleine, Que.
	Grand'Mère, Que.
	Hull, Que.
B—Peak at 15-19	Joliette, Que.
	Lévis, Que.
C—Peaks at 15-19 and 35-39	North Bay, Ont.
	Sydney, N.S.
D—Peak at 15-34	Windsor, Ont.
E—Peak at 15-29	St-Jean, Que.
F—Peaks at 15-24 and 30-34	Niagara Falls, Ont.
G—Peaks at 15-19 and 40-44	Sorel, Que.
H—Peaks at 20-24 and 35-39	Prince Albert, Sask.
I—Peak at 25-39	East Windsor, Ont.
J—Peak at 30-34	Sarnia, Ont.
K—Peak at 35-39	Rivière-du-Loup, Que.
L—Peak at 35-44	Fort William, Ont.
	Prince Rupert, B.C.
M—Peaks at 35-39 and 45-49	Longueuil, Que.

TABLE 3. Cities of 5,000 population and over classified according to the age group containing maximum population, and showing secondary peaks, for (a) total population, (b) male population and (c) female population, 1931—Con.

Class	City
(C) FEMALE POPULATION—Con	
III—Maximum in age group 10-14—	
A—Follows natural curve	Lachine, Que.
	Sault Ste. Marie, Ont.
	Welland, Ont.
B—Peak at 35-44	St. Catharines, Ont.
	Swift Current, Sask.
IV—Maximum in age group 15-19—	
A—Follow natural curve	Ottawa, Ont.
	Galt, Ont.
	Weyburn, Sask.
B—Peaks at 0-4 and 35-39	Owen Sound, Ont.
C—Peak at 5-9	St. Boniface, Man.
D—Dip at 5-9	Lethbridge, Alta.
E—Peaks at 5-9 and 35-39	Fredericton, N.B.
	Kingston, Ont.
	North Battleford, Sask.
	St. Thomas, Ont.
	Charlottetown and Royalty, P.E.I
F—Peaks at 5-9 and 40-44	St-Hyacinthe, Que.
	Yorkton, Sask.
G—Peaks at 5-9 and 45-49	Nanaimo, B.C.
H—Peaks at 5-9 and 60-64	Belleville, Ont.
I—Peaks at 5-9, 35-39 and 50-54	Chatham, Ont.
J—Dip at 10-14	Sherbrooke, Que.
K—Peak at 30-49	North Vancouver, B.C
L—Peak at 35-39	Brantford, Ont.
	Edmonton, Alta.
	Medicine Hat, Alta.
	Portage la Prairie, Man.
	Port Arthur, Ont.
	St-Lambert, Que.
	Saint John, N.B.
M—Peak at 35-44	Brandon, Man.
	Moose Jaw, Sask.
	Peterborough, Ont.
N—Peaks at 30-34 and 40-44	New Westminster, B.C.
O—Peaks at 30-34 and 45-49	Kamloops, B.C.
P—Peak at 35-49	Vancouver, B.C.
Q—Peaks at 35-39 and 45-49	Victoria, B.C.
R—Peak at 40-44	Nelson, B.C.
	Stratford, Ont.
V—Maximum in age group 20-24—	
A—Follows natural curve	Outremont, Que.
	Westmount, Que.
B—Dip at 5-14	Granby, Que.
C—Dip at 10-14	Guelph, Ont.
	Halifax, N.S.
	Kitchener, Ont.
	Montreal, Que.
D—Dip at 10-14, peak at 30-34	Moncton, N.B.
E—Peak at 5-9	Hamilton, Ont.
	Regina, Sask.
	Toronto, Ont.
F—Peak at 35-39	London, Ont.
	Saskatoon, Sask.
	Woodstock, Ont.
	Winnipeg, Man
G—Peak at 40-44	Calgary, Alta.

TABLE 4. Eight selected cities showing total population, 1911, 1921 and 1931, survivors 10 years later of 1911 and 1921 populations and accretions from outside in the decades 1911-1921 and 1921-1931, by quinquennial age groups

Age Group	Approximate P.C. Surviving 10 Years[2]	Population, 1911	Number Surviving at Appropriate Age, 1921	Population, 1921	Number Surviving at Appropriate Age, 1931	Population, 1931	Accretions from Outside	
							1911-21	1921-31
TORONTO[1]								
All ages[3]	-	**375,684**	**348,248**	**520,991**	**479,313**	**630,952**	-	-
0- 4	97·3	36,945	-	46,933	-	45,244	-	-
5- 9	98·2	30,531	-	49,867	-	60,636	-	-
10-14	97·6	28,059	35,947	42,957	45,666	49,982	7,010	4,316
15-19	96·9	33,313	29,981	41,269	48,969	56,224	11,288	7,255
20-24	96·7	45,659	27,386	47,137	41,926	60,787	19,751	18,861
25-29	96·4	46,226	32,280	51,640	39,990	55,709	19,360	15,719
30-34	95·8	36,712	44,152	48,949	45,581	51,919	4,797	6,338
35-39	94·7	28,735	44,562	47,394	49,781	52,269	2,832	2,488
40-44	93·0	23,060	35,170	37,826	46,893	49,270	2,656	2,377
45-49	90·1	19,110	27,212	29,549	44,882	43,646	2,337	-
50-54	85·7	15,769	21,446	24,819	35,178	36,343	3,373	1,165
55-59	79·4	10,562	17,218	17,505	26,624	24,835	287	-
60-64	69·9	8,497	13,505	14,664	21,270	19,820	1,159	-
65-69	56·5	5,336	8,386	9,023	13,899	14,519	637	620
70-74	40·0	3,544	5,939	5,873	10,250	10,603	-	353
75-79	23·8	2,103	3,015	3,149	5,098	5,418	134	320
80-84	11·2	1,020	1,418	1,630	2,349	2,524	212	175
85-89	3·8	382	501	640	749	925	139	176
90-94	0·76	120	114	135	183	232	21	49
95-99	-	9	15	28	24	41	13	17
100 and over	-	2	1	4	1	6	3	5
WINNIPEG								
All ages[3]	-	**134,060**	**126,527**	**178,834**	**166,961**	**218,720**	-	-
0- 4	97·3	16,815	-	18,673	-	14,990	-	-
5- 9	98·2	11,551	-	20,702	-	18,261	-	-
10-14	97·6	9,636	16,361	16,656	18,169	19,975	295	1,806
15-19	96·9	11,468	11,343	14,288	20,329	23,538	2,945	3,209
20-24	96·7	17,650	9,405	14,808	16,256	22,941	5,403	6,685
25-29	96·4	19,351	11,112	17,103	13,845	18,809	5,991	4,964
30-34	95·8	14,766	17,068	17,778	14,319	16,274	710	1,956
35-39	94·7	10,046	18,654	16,898	16,487	16,875	-	388
40-44	93·0	7,022	14,146	13,227	17,031	17,033	-	2
45-49	90·1	5,249	9,514	9,077	16,002	15,849	-	-
60-54	85·7	4,123	6,530	6,793	12,301	12,193	263	-
55-59	79·4	2,552	4,729	4,771	8,178	7,756	42	-
60-64	69·9	1,774	3,533	3,603	6,822	5,596	70	-
65-69	56·5	953	2,026	2,169	3,788	3,920	143	132
70-74	40·0	586	1,240	1,279	2,518	2,561	39	43
75-79	23·8	321	538	606	1,225	1,300	68	76
80-84	11·2	139	234	279	512	604	45	92
85-89	3·8	49	76	100	144	195	24	51
90-94	0·76	6	16	18	31	35	2	4
95-99	-	2	2	4	4	10	2	6
100 and over	-	1	-	2	-	5	2	5
OTTAWA								
All ages[3]	-	**86,917**	**80,362**	**107,383**	**98,458**	**126,824**	-	-
0- 4	97·3	9,401	-	10,733	-	10,499	-	-
5- 9	98·2	8,878	-	11,187	-	11,785	-	-
10-14	97·6	8,102	9,147	9,555	10,443	11,494	408	1,061
15-19	96·9	8,794	8,718	9,895	10,986	12,725	1,177	1,739
20-24	96·7	9,551	7,908	10,290	9,326	11,931	2,382	2,605
25-29	96·4	8,568	8,521	10,003	9,588	10,074	1,482	486
30-34	95·8	6,854	9,236	8,758	9,950	9,506	-	-
35-39	94·7	6,155	8,260	8,102	9,643	9,562	-	-
40-44	93·0	4,928	6,566	6,559	8,390	8,594	-	204
45-49	90·1	4,313	5,829	5,697	7,673	7,610	-	-
60-54	85·7	3,498	4,583	4,819	6,100	6,342	236	242
55-59	79·4	2,461	3,886	3,721	5,133	4,998	-	-
60-64	69·9	2,010	2,998	2,965	4,130	4,005	-	-
65-69	56·5	1,419	1,954	2,201	2,954	3,087	247	133
70-74	40·0	952	1,405	1,457	2,073	2,297	52	224
75-79	23·8	540	802	777	1,244	1,353	-	109
80-84	11·2	313	381	453	583	638	72	55
85-89	3·8	109	129	167	185	242	38	57
90-94	0·76	44	35	30	51	62	-	11
95-99	-	27	4	10	6	19	-	13
100 and over	-	-	-	4	-	1	-	1

[1] The area of Toronto in 1911 varied in a small degree from that of 1921, but the difference was not of sufficient importance to affect the comparison.
[2] See Canadian Life Tables, 1931.
[3] Stated age only.

TABLE 4. Eight selected cities showing total population, 1911, 1921 and 1931, survivors 10 years later of 1911 and 1921 populations and accretions from outside in the decades 1911-1921 and 1921-1931, by quinquennial age groups—Con.

Age Group	Approximate P.C. Surviving 10 Years[2]	Population, 1911	Number Surviving at Appropriate Age, 1921	Population, 1921	Number Surviving at Appropriate Age, 1931	Population, 1931	Accretions from Outside	
							1911-21	1921-31
HAMILTON								
All ages[3]	-	**81,919**	**75,556**	**114,041**	**104,770**	**155,516**	-	-
0- 4	97·3	8,049	-	11,212	-	13,088	-	-
5- 9	98·2	6,592	-	11,537	-	14,568	-	-
10-14	97·6	6,212	7,832	9,758	10,909	13,658	1,926	2,749
15-19	96·9	7,373	6,473	9,143	11,428	14,083	2,670	2,655
20-24	96·7	9,445	5,063	9,470	9,524	13,646	3,407	4,122
25-29	96·4	9,643	7,144	10,592	8,860	12,791	3,448	3,931
30-34	95·8	7,869	9,133	10,437	9,157	12,757	1,304	3,500
35-39	94·7	6,157	9,296	10,051	10,211	12,339	755	2,128
40-44	93·0	5,106	7,539	7,979	9,999	11,655	440	1,556
45-49	90·1	4,212	6,831	6,460	9,518	10,351	529	833
50-54	85·7	3,608	4,749	5,258	7,420	8,305	509	885
55-59	79·4	2,493	3,795	3,974	6,820	6,698	179	-
60-64	69·9	1,874	3,092	3,327	4,506	4,472	235	-
65-69	56·5	1,375	1,979	2,143	3,155	3,385	164	230
70-74	40·0	947	1,310	1,253	2,325	2,623	-	297
75-79	23·8	641	777	791	1,211	1,355	14	145
80-84	11·2	278	379	368	501	555	-	54
85-89	3·8	106	129	137	188	215	8	27
90-94	0·76	29	31	41	41	60	10	19
95-99	-	9	4	8	5	9	4	4
100 and over	-	1	-	2	-	2	2	2
QUEBEC								
All ages[3]	-	**78,588**	**71,988**	**94,995**	**87,107**	**130,543**	-	-
0- 4	97·3	9,967	-	12,139	-	15,633	-	-
5- 9	98·2	8,733	-	11,045	-	14,768	-	-
10-14	97·5	7,694	9,698	9,837	11,811	13,221	139	1,410
15-19	96·9	7,828	8,676	9,340	10,846	13,528	764	2,682
20-24	96·7	7,791	7,412	8,746	9,601	13,445	1,333	3,844
25-29	96·4	6,515	7,585	7,883	9,050	11,175	298	2,125
30-34	95·8	5,530	7,534	6,773	8,456	9,124	-	668
35-39	94·7	4,640	6,281	5,793	7,599	8,221	-	622
40-44	93·0	4,061	5,298	4,984	5,489	7,073	-	584
45-49	90·1	3,720	4,394	4,193	5,486	5,817	-	331
50-54	85·7	3,424	3,777	3,579	4,535	5,149	-	514
55-59	79·4	2,615	3,352	2,945	3,778	3,797	-	19
60-64	69·9	2,230	2,934	2,844	3,057	3,109	-	42
65-69	56·5	1,493	2,077	2,090	2,338	2,535	13	197
70-74	40·0	1,117	1,559	1,340	1,988	1,919	-	-
75-79	23·8	708	844	805	1,181	1,175	-	-
80-84	11·2	401	447	431	536	578	-	42
85-89	3·8	171	169	153	192	222	-	30
90-94	0·76	41	45	46	48	50	1	2
95-99	-	6	6	20	6	14	14	8
100 and over	-	1	-	-	-	-	-	-
WINDSOR								
All ages[3]	-	**17,787**	**16,354**	**38,540**	**35,711**	**63,094**	-	-
0- 4	97·3	1,703	-	4,243	-	5,025	-	-
5- 9	98·2	1,585	-	3,680	-	6,450	-	-
10-14	97·6	1,552	1,657	2,998	4,128	5,749	1,341	1,621
15-19	96·9	1,817	1,557	3,146	3,614	5,474	1,589	1,860
20-24	95·7	1,996	1,625	3,974	2,926	6,370	2,449	2,444
25-29	96·4	1,736	1,761	4,175	3,048	5,809	2,414	2,761
30-34	95·8	1,385	1,930	3,730	3,843	6,863	1,800	2,020
35-39	94·7	1,271	1,674	3,185	4,025	6,483	1,611	1,458
40-44	93·0	1,074	1,327	2,317	3,573	4,582	990	1,009
45-49	90·1	1,019	1,204	2,060	3,016	3,793	856	777
50-54	85·7	843	999	1,603	2,155	2,754	504	599
55-59	79·4	560	918	1,251	1,855	1,952	333	106
60-64	69·9	474	722	885	1,374	1,411	153	37
65-69	56·5	333	445	598	993	1,064	153	71
70-74	40·0	193	331	363	619	667	32	48
75-79	23·8	126	188	187	338	376	-	38
80-84	11·2	71	77	103	145	150	25	15
85-89	3·8	25	30	31	45	76	1	31
90-94	0·76	13	8	6	12	13	-	1
95-99	-	-	1	5	1	2	4	1
100 and over	-	-	-	-	-	1	-	1

TABLE 4. Eight selected cities showing total population, 1911, 1921 and 1931, survivors 10 years later of 1911 and 1921 populations and accretions from outside in the decades 1911-1921 and 1921-1931, by quinquennial age groups—Con.

Age Group	Approximate P.C. Surviving 10 Years[2]	Population, 1911	Number Surviving at Appropriate Age, 1921	Population, 1921	Number Surviving at Appropriate Age, 1931	Population, 1931	Accretions from Outside	
							1911-21	1921-31
HALIFAX								
All ages[3]	-	**46,468**	**42,648**	**58,277**	**53,680**	**59,251**	-	-
0- 4	97·3	5,237	-	6,352	-	5,642	-	-
5- 9	98·2	4,725	-	5,575	-	5,908	-	-
10-14	97·6	4,386	5,096	5,366	6,180	5,712	270	-
15-19	96·9	4,799	4,640	5,614	6,475	5,662	974	187
20-24	96·7	4,844	4,281	6,562	5,237	5,956	2,281	719
25-29	96·4	4,135	4,650	5,948	5,440	5,048	1,298	-
30-34	95·8	3,408	4,684	4,441	6,345	4,545	-	-
35-39	94·7	3,173	3,986	3,954	5,734	4,379	-	-
40-44	93·0	2,707	3,265	3,428	4,254	3,643	163	-
45-49	90·1	2,283	3,005	2,912	3,744	3,041	-	-
50-54	85·7	1,922	2,518	2,488	3,188	2,774	-	-
55-59	79·4	1,320	2,057	1,739	2,624	2,053	-	-
60-64	69·9	1,236	1,647	1,420	2,132	1,672	-	-
65-69	66·5	934	1,048	974	1,381	1,366	-	-
70-74	40·0	645	864	681	993	885	-	-
75-79	23·8	407	528	434	550	507	-	-
80-84	11·2	187	258	238	272	300	-	28
85-89	3·8	88	97	113	103	116	16	13
90-94	0·76	28	21	30	27	32	9	6
95-99	-	3	3	8	4	9	5	5
100 and over	-	1	-	-	-	1	-	1
VICTORIA								
All ages[3]	-	**31,367**	**29,063**	**38,686**	**35,140**	**38,766**	-	-
0- 4	97·3	2,389	-	2,928	-	1,939	-	-
5- 9	98·2	2,196	-	3,583	-	2,632	-	-
10-14	97·6	2,229	2,324	3,214	2,849	3,039	890	190
15-19	96·9	2,533	2,156	3,044	3,519	3,610	888	91
20 24	96·7	3,580	2,176	2,674	3,137	3,013	498	-
25-29	96·4	4,100	2,454	2,976	2,950	2,377	522	-
30-34	95·8	3,438	3,462	3,314	2,686	2,203	-	-
35-39	94·7	2,833	3,952	3,655	2,869	2,718	-	-
40-44	93·0	2,460	3,294	3,331	3,175	3,094	37	-
45-49	90·1	1,816	2,683	2,642	3,461	3,251	-	-
50-54	85·7	1,352	2,288	2,408	3,098	3,133	120	35
55-59	79·4	799	1,636	1,629	2,380	2,392	-	12
60-64	69·9	621	1,159	1,429	2,064	1,911	270	-
65-69	56·5	420	634	835	1,293	1,487	201	194
70-74	40·0	310	434	490	999	1,030	56	31
75-79	23·8	163	237	302	472	554	65	82
80-84	11·2	91	124	158	196	251	34	65
85-89	3·8	30	39	62	72	97	23	25
90-94	0·76	6	10	9	18	32	-	14
95-99	-	1	1	2	2	3	1	1
100 and over	-	-	-	1	-	-	1	-

APPENDIX

APPENDIX

THE EVOLUTION OF CANADIAN AGE DISTRIBUTION

Introduction.—The following introduction to the appendix is solely explanatory; it is not an argument. It must be emphasized that the conclusions which are arrived at in the appendix proper are not based upon the theoretical considerations to be now mentioned; rather the considerations are themselves based upon the results obtained from observations of the actual data on Canadian age distribution over a period of 50 years.

The conclusion arrived at is that the shape of age distribution, as it develops, passes through degree after degree of an exponential curve. The compound interest curve, *i.e.*, the "geometrical progression" curve, is the first degree, *viz.*, ab^{-x}; the second degree is ac^{-x^2}; the third degree, ad^{-x^3}, where a is the initial number of persons—say, at the age of zero—and x is the age. Usually the number at each successive age is smaller than at the preceding age. This is the reason why x has a minus sign. Throughout this appendix, x is measured in quinquenniums, *i.e.*, x_1 is 5; x_2 is 10 and so on, and the number at each age group is the number per 10,000 population. For convenience, the letters b, c, d, etc., are permanently attached to the x^{-1}, x^{-2}, x^{-3}, etc., and we shall call the successive degrees the b curve (or shape), the c curve, the d curve, etc.

At the outset it will be well to be familiar with the actual shapes of the b curve, the c curve, etc. By the very nature of an age distribution the total number must come between ages 0 and, say, 104, or in 21 quinquenniums. It is tacitly assumed that no one lives over that age. Since we are expressing the age distribution in "per 10,000" the area of the curve must be the same, whatever degree we use. The higher the degree the flatter the curve. However, steepness and flatness are not here considered the important difference between the shapes; rather it is concavity and convexity. The b curve is concave to a line drawn between the points; the c curve, an inverted s while the higher the degree the more convex it becomes until we have a shape which is convex upwards throughout and may be presumed to be an n curve, the value of n being very great.

Now, laying down the condition that the same area must occupy same width, it is well to be clear as to what causes concavity and convexity. Statement A will illustrate this point and Chart I shows b, c and d curves, each describing a population of 10,000 who must be all dead in 104 years or 21 quinquenniums from age zero. A column of differences is given for the purpose of showing the manner of decrease from age to age. The convexity or concavity refers to the shape on the familiar arithmetic scale. It will be noticed that in the case of the b curve the decrease (in absolute numbers, not rates) becomes smaller and smaller from the very beginning. This is what gives it its concave shape. In the c curve the decrease becomes larger up to the age of 30 and then becomes smaller. The reason for this is that the numbers themselves become so small that the same absolute decrease would presuppose a very great *rate* of decrease. This gives the c curve its s shape. In the d curve the decreases become larger and larger up to the age of 50 and then become smaller. Consequently the curve is convex up to the age of 50. An e curve would probably be convex to the age of 65 or of 70, an f curve to a still greater age, and probably a g or h curve would describe the Canadian life table of 1931.

The regular development of the age distribution, then, is in the direction of convexity, away from concavity. The s shape may be considered an intermediate point and we have a case of an s shape (*i.e.*, a pure c curve) in Canadian males in 1901. Each step of the development from the pure b curve means a progressive movement of concavity from the first two quinquenniums to the third and so on. Since the width of the area is limited to 21 quinquenniums the zero end of the curve becomes progressively lower, but this is merely incidental. The important condition of the higher-degree curves is that the decrease between the successive groups increase. In actual cases the shapes are mixed and the shape which fits best is the b-c-d curve.

A.—COMPARATIVE VALUES OF SIMPLE *B*, *C* AND *D* CURVES FULFILLING THE CONDITION THAT A POPULATION OF 10,000 BE INCLUDED IN 21 AGE GROUPS

Age Group	x	Distribution When Fitted to			First Difference		
		ab^{-x}	ac^{-x^2}	ad^{-x^3}	ab^{-x}	ac^{-x^2}	ad^{-x^3}
All ages		10,000	10,000	10,000	-	-	-
0- 4	1	2,807	1,495	1,069	-	-	-
5- 9	2	2,020	1,426	1,063	787	69	0
10-14	3	1,453	1,320	1,048	567	106	15
15-19	4	1,046	1,182	1,020	407	138	28
20-24	5	753	1,026	975	293	156	45
25-29	6	542	865	911	211	161	64
30-34	7	390	705	828	152	160	83
35-39	8	280	558	730	110	147	98
40-44	9	202	428	621	78	130	109
45-49	10	145	318	508	57	110	113
50-54	11	105	228	397	40	90	111
55-59	12	75	160	295	30	68	102
60-64	13	54	108	208	21	52	87
65-69	14	39	71	138	15	37	70
70-74	15	28	45	86	11	26	52
75-79	16	20	28	51	8	17	15
80-84	17	14	17	28	6	11	23
85-89	18	10	10	14	4	7	14
90-94	19	8	5	6	2	5	8
95-99	20	5	3	3	3	2	3
100 and over	21	4	2	1	1	1	2

COMPARATIVE b, c AND d CURVES EACH HAVING 10,000 POPULATION WITHIN 21 AGE GROUPS

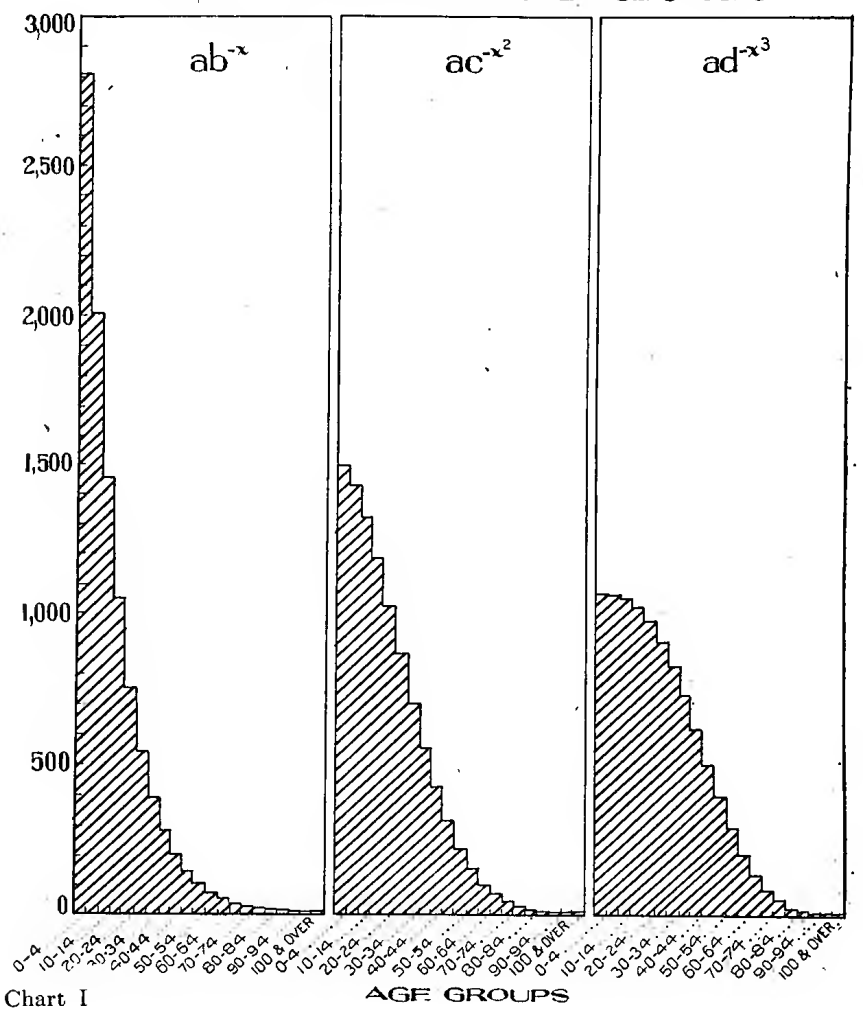


Chart I

The Evolution of Canadian Age Distribution.—The foregoing explanatory material obviates the necessity of using such terms as "first", "second" and "third" degree, "three or four constant" curves, etc. It will be understood that the successive degrees are designated by the letters *b*, *c*, *d*, etc., while in every case the values assigned to these letters are the values of the logarithms. The reason why curves were used at all was because it was impossible to form a correct idea of the development of the shape of the age distribution by the eye alone. Further, in the literature on age distribution, use is made of smoothing for life-table purposes by the method of differences of the logarithms. If this is done for refined purposes like life tables, it surely may be used for the much rougher purpose of estimating the changes in shape due to stages of development.

It is clear that if age distribution develops by passing from one degree to another, then the development in shape is one of growing convexity caused by the difference in the number at each successive age increasing arithmetically. In a first degree curve this difference decreases from the very outset because the ratio between each successive group is the same and the fraction of a number is arithmetically larger than the same fraction of this number after it has been reduced. Such a shape is concave. If the development were smooth, the moment the curve passed from the first to a higher degree the shape would begin to become convex at the earlier ages; as it proceeded the convexity would spread to later and later ages.

In the search for a criterion to describe the development of the age distribution of Canada, it was assumed that if the age distribution of successive censuses were fitted with exactly the same kind of curve, the changes in the value of the constants for the curve would indicate the development, as long as the curve showed reasonable fit. Accordingly, for every census the age distribution of males in Canada was fitted to *b-c-d*, *b-c* and *b-d* curves; for the censuses from 1891 on it was also fitted to the simple *c* curve; for those from 1901 on, to the *c-d* curve, and for the 1931 Census to the simple *d* curve. Since an earlier stage than Canada, 1881, was clearly indicated in the distribution of Quebec, males, 1881, this also was fitted to the *b-c-d*, *b-c* and *b-d* curves. The results of these fittings are shown in Statements B and C. The criterion of good fitting used was a rough one, *viz.*, the arithmetic sum of the errors from the actual number at each quinquennial age group. It was considered that to use a finer criterion was to aim at greater precision than the data justified. Since the same criterion was used in all cases, the comparison seemed valid.

In further explanation it should be stated that we are considering the succession of ages as 1, 2, 3, etc., instead of 0–4, 5–9, etc. This shift of co-ordinates introduced no inconvenience for our purpose.

B.—DISTRIBUTION BY QUINQUENNIAL AGE GROUPS OF THE MALE POPULATION OF QUEBEC WHEN FITTED[1] TO EXPONENTIAL CURVES, AND SHOWING THE ERROR OF EACH FITTING FROM THE ACTUAL POPULATION, 1881

Age Group	x	Quebec, Males, 1881			
		Actual	Distribution When Fitted to		
			(1) $ab^{-x}c^{-x^2}d^{-x^3}$	(2) $ab^{-x}c^{-x^2}$	(3) $ab^{-x}d^{-x^3}$
0- 4	1	1,541	1,618	1,516	1,549
5- 9	2	1,361	1,366	1,350	1,352
10-14	3	1,176	1,167	1,190	1,178
15-19	4	1,068	1,002	1,039	1,023
20-24	5	952	862	898	883
25-29	6	742	742	769	759
30-34	7	601	636	652	647
35-39	8	524	543	547	547
40-44	9	416	459	455	458
45-49	10	376	384	375	380
50-54	11	312	317	306	311
55-59	12	264	257	247	252
60-64	13	219	205	198	201
65-69	14	169	160	157	158
70-74	15	127	121	123	122
75-79	16	82	90	95	92
80-84	17	45	64	73	69
85-89	18	18	45	56	50
90-94	19	5	30	42	36
95-99	20	2	19	32	25
100 and over	21	-	12	23	17
Error			501	503	449

(1) Log $y = 3{\cdot}2836152 - 0{\cdot}0789662\,x + 0{\cdot}0028483\,x^2 - 0{\cdot}0001944\,x^3$
(2) Log $y = 3{\cdot}2271183 - 0{\cdot}0442320\,x - 0{\cdot}0021086\,x^2$
(3) Log $y = 3{\cdot}2484140 - 0{\cdot}0583175\,x - 0{\cdot}0000854\,x^3$

[1] Fitted for 16 cases.

C.—DISTRIBUTION BY QUINQUENNIAL AGE GROUPS OF THE MALE POPULATION OF CANADA WHEN FITTED[1] TO EXPONENTIAL CURVES, AND SHOWING THE ERROR OF EACH FITTING FROM THE ACTUAL POPULATIONS, 1881-1931

Age Group	x	Canada, Males, 1881				Canada, Males, 1891				
		Actual	Distribution When Fitted to			Actual	Distribution When Fitted to			
			(1) $ab^{-x}c^{-x^2}$	(2) $ab^{-x}c^{-x^2}d^{-x^3}$	(3) $ab^{-x}d^{-x^3}$		(1) $ab^{-x}c^{-x^2}$	(2) $ab^{-x}c^{-x^2}d^{-x^3}$	(3) ac^{-x^2}	(4) $ab^{-x}d^{-x^3}$
0- 4	1	1,389	1,395	1,497	1,444	1,260	1,275	1,340	1,193	1,330
5- 9	2	1,302	1,286	1,305	1,292	1,224	1,209	1,221	1,160	1,221
10-14	3	1,200	1,168	1,143	1,152	1,152	1,126	1,110	1,101	1,110
15-19	4	1,099	1,046	1,004	1,022	1,063	1,032	1,003	1,026	1,005
20-24	5	980	923	881	900	976	932	901	938	903
25-29	6	765	803	771	786	801	824	801	841	803
30-34	7	607	688	670	679	675	718	704	738	706
35-39	8	533	582	576	580	576	615	611	635	612
40-44	9	453	484	489	488	490	518	522	536	522
45-49	10	402	398	409	405	415	429	438	443	437
50-54	11	333	322	335	330	362	349	360	359	359
55-59	12	266	257	269	264	275	280	289	285	288
60-64	13	241	202	210	206	259	221	227	222	226
65-69	14	169	156	160	158	184	171	173	170	173
70-74	15	121	119	118	118	136	130	129	127	129
75-79	16	76	90	84	86	83	97	93	93	93
80-84	17	43	67	58	61	44	72	64	69	65
85-89	18	15	49	38	42	17	52	43	47	44
90-94	19	4	35	24	28	6	37	28	33	29
95-99	20	2	25	14	18	2	26	17	22	18
100 and over	21	-	17	8	11	-	18	10	13	11
Error			584	651	608		503	548	691	544

(1) $\log y = 3{\cdot}1740757 - 0{\cdot}0260744x - 0{\cdot}0031388x^2$
(2) $\log y = 3{\cdot}2389064 - 0{\cdot}0659705x + 0{\cdot}0025549x^2 - 0{\cdot}0002233x^3$
(3) $\log y = 3{\cdot}2074240 - 0{\cdot}0474565x - 0{\cdot}0001255x^3$

(1) $\log y = 3{\cdot}1214238 - 0{\cdot}0122384x - 0{\cdot}0036647x^2$
(2) $\log y = 3{\cdot}1669044 - 0{\cdot}0402007x + 0{\cdot}0003258x^2 - 0{\cdot}0001565x^3$
(3) $\log y = 3{\cdot}0847067 - 0{\cdot}0043846x$
(4) $\log y = 3{\cdot}1629169 - 0{\cdot}0378477x - 0{\cdot}0001440x^3$

Age Group	x	Canada, Males, 1901						Canada, Males, 1911					
		Actual	Distribution When Fitted to					Actual	Distribution When Fitted to				
			(1) $ab^{-x}c^{-x^2}$	(2) $ab^{-x}c^{-x^2}d^{-x^3}$	(3) $ac^{-x^2}d^{-x^3}$	(4) ac^{-x^2}	(5) $ab^{-x}d^{-x^3}$		(1) $ab^{-x}c^{-x^2}$	(2) $ab^{-x}c^{-x^2}d^{-x^3}$	(3) $ac^{-x^2}d^{-x^3}$	(4) ac^{-x^2}	(5) $ab^{-x}d^{-x^3}$
0- 4	1	1,191	1,157	1,236	1,142	1,174	1,216	1,181	1,043	1,099	1,094	1,209	1,124
5- 9	2	1,143	1,130	1,145	1,115	1,141	1,140	1,041	1,067	1,078	1,076	1,173	1,084
10-14	3	1,086	1,083	1,060	1,069	1,088	1,064	935	1,062	1,047	1,045	1,120	1,039
15-19	4	1,030	1,017	977	1,008	1,018	986	926	1,029	998	1,000	1,045	987
20-24	5	944	937	896	932	935	905	1,017	971	938	940	957	925
25-29	6	795	846	814	846	842	821	976	891	865	867	860	854
30-34	7	691	749	730	753	745	735	818	797	781	782	758	773
35-39	8	634	651	645	658	646	647	679	693	688	690	655	685
40-44	9	558	555	559	562	550	559	561	587	592	592	555	592
45-49	10	462	463	475	471	459	473	471	484	494	494	402	497
50-54	11	390	379	394	386	377	391	402	389	401	400	376	406
55-59	12	302	303	318	309	303	315	298	304	315	314	301	318
60-64	13	267	239	249	242	239	247	249	231	238	238	236	241
65-69	14	200	185	189	185	185	188	178	172	174	174	182	175
70-74	15	144	140	138	138	141	138	126	124	122	122	137	122
75-79	16	90	104	97	101	105	98	80	87	83	83	101	81
80-84	17	48	76	65	72	77	67	41	59	53	53	73	51
85-89	18	18	54	42	50	55	44	16	39	33	33	52	31
90-94	19	5	38	26	33	39	28	4	26	19	20	36	17
95-99	20	2	26	15	22	27	17	1	17	11	11	25	9
100 and over	21	-	18	8	14	18	10	-	9	6	6	17	5
Error..			412	402	404	384	381		739	693	694	958	678

(1) $\log y = 3{\cdot}0646378 + 0{\cdot}0027342x - 0{\cdot}0042674x^2$
(2) $\log y = 3{\cdot}1268901 - 0{\cdot}0355382x + 0{\cdot}0011944x^2 - 0{\cdot}0002142x^3$
(3) $\log y = 3{\cdot}0611816 - 0{\cdot}0034663x^2 - 0{\cdot}0000417x^3$
(4) $\log y = 3{\cdot}0736666 - 0{\cdot}0041154x^2$
(5) $\log y = 3{\cdot}1121197 - 0{\cdot}0268773x - 0{\cdot}0001685x^2$

(1) $\log y = 2{\cdot}9971072 + 0{\cdot}0271575x - 0{\cdot}0058343x^2$
(2) $\log y = 3{\cdot}0445926 - 0{\cdot}0020370x - 0{\cdot}0016679x^2 - 0{\cdot}0001634x^3$
(3) $\log y = 3{\cdot}0408041 - 0{\cdot}0019337x^2 - 0{\cdot}0001536x^3$
(4) $\log y = 3{\cdot}0867899 - 0{\cdot}0042246x^2$
(5) $\log y = 3{\cdot}0652382 - 0{\cdot}0141361x - 0{\cdot}0002272x^3$

[1] Fitted for 16 cases.

C.—DISTRIBUTION BY QUINQUENNIAL ACE GROUPS OF THE MALE POPULATION OF CANADA WHEN FITTED[1] TO EXPONENTIAL CURVES, AND SHOWING THE ERROR OF EACH FITTING FROM THE ACTUAL POPULATIONS, 1881-1931—Con.

Age Group	x	Canada, Males, 1921					
		Actual	Distribution When Fitted to				
			(1) $ab^{-x}c^{-x^2}$	(2) $ab^{-x}c^{-x^2}d^{-x^3}$	(3) $ac^{-x^2}d^{-x^3}$	(4) ac^{-x^2}	(5) $ab^{-x}d^{-x^3}$
0- 4	1	1,181	1,029	1,229	1,038	1,183	1,085
5- 9	2	1,170	1,051	1,088	1,027	1,151	1,054
10-14	3	1,021	1,046	989	1,007	1,097	1,018
15-19	4	892	1,014	914	974	1,026	974
20-24	5	777	961	854	928	943	921
25-29	6	769	886	798	868	850	856
30-34	7	760	796	742	794	751	782
35-39	8	758	698	681	710	652	698
40-44	9	634	596	611	618	555	611
45-49	10	524	496	532	522	464	515
50-54	11	432	403	447	427	380	423
55-59	12	328	318	358	337	306	335
60-64	13	280	246	273	257	241	256
65-69	14	201	185	195	187	187	188
70-74	15	134	135	131	131	142	132
75-79	16	79	97	81	87	106	88
80-84	17	40	68	46	56	77	56
85-89	18	16	46	24	34	50	34
90-94	19	4	30	12	19	39	19
95-99	20	-	19	5	10	27	10
100 and over	21	-	12	2	5	18	5
Error			1,044	608	858	1,051	770

(1) Log $y = 2{\cdot}9916969 + 0{\cdot}0259518x - 0{\cdot}0055562x^2$
(2) Log $y = 3{\cdot}1567109 - 0{\cdot}0754988x + 0{\cdot}0089218x^2 - 0{\cdot}0005678x^3$
(3) Log $y = 3{\cdot}0171712 - 0{\cdot}0009832x^2 - 0{\cdot}0002011x^3$
(4) Log $y = 3{\cdot}0773946 - 0{\cdot}0041135x^2$
(5) Log $y = 3{\cdot}0465388 - 0{\cdot}0108415x - 0{\cdot}0002263x^3$

Age Group	v	Canada, Males, 1931						
		Actual	Distribution When Fitted to					
			(1) $ab^{-x}c^{-x^2}$	(2) $ab^{-x}c^{-x^2}d^{-x^3}$	(3) $ac^{-x^2}d^{-x^3}$	(4) $ab^{-x}d^{-x^3}$	(5) ac^{-x^2}	(6) ad^{-x^3}
0- 4	1	1,011	951	1,100	980	1,006	1,130	965
5- 9	2	1,065	985	1,014	975	991	1,101	961
10-14	3	1,010	995	950	962	970	1,056	951
15-19	4	977	980	900	939	941	994	932
20-24	5	863	941	855	904	902	920	902
25-29	6	763	882	810	855	851	838	858
30-34	7	685	805	760	796	789	750	800
35-39	8	668	717	703	723	716	660	730
40-44	9	647	623	636	641	634	572	648
45-49	10	598	528	559	552	546	485	559
50-54	11	497	436	474	460	456	406	466
55-59	12	371	351	386	371	368	334	375
60-64	13	292	275	300	288	287	269	290
65-69	14	225	211	221	215	215	214	215
70-74	15	165	157	153	154	154	167	153
75-79	16	93	115	99	104	106	128	134
80-84	17	44	81	60	69	69	97	66
85-89	18	16	56	33	42	43	72	40
90-94	19	4	38	17	25	25	52	23
95-99	20	1	25	8	13	14	38	12
100 and over	21	-	16	3	7	7	26	6
Error			919	616	722	675	1,029	799

(1) Log $y = 2{\cdot}9517365 + 0{\cdot}0317707x - 0{\cdot}0054722x^2$
(2) Log $y = 3{\cdot}0869077 - 0{\cdot}0513316x + 0{\cdot}0063872x^2 - 0{\cdot}0004651x^3$
(3) Log $y = 2{\cdot}9920707 - 0{\cdot}0003485x^2 - 0{\cdot}0002157x^3$
(4) Log $y = 3{\cdot}0080561 - 0{\cdot}0050476x - 0{\cdot}0002206x^3$
(5) Log $y = 3{\cdot}0566472 - 0{\cdot}0037060x^2$
(6) Log $y = 2{\cdot}9846892 - 0{\cdot}0002375x^3$

[1]Fitted for 16 cases.

The purpose of this examination was to ascertain whether the ages show any indication of development and in what direction. It will be quite clear that as simple a curve as possible was necessary. Two curves were found to fit consistently well, *i.e.*, the *b-c-d* and *b-d* curves. In the *b-c-d* curve the *b* and *d* showed minus signs and the *c* a plus sign. If the distribution were perfectly smooth, no doubt as the age distribution developed the arithmetic value of *b* would become smaller and that of *d* larger. But the age distributions are not smooth and, consequently, the plus value of *c* becomes very ambiguous as it seems to recognize in the shape certain irregularities which are not normal. For this reason, although the changing values of *b*, *c* and *d* in the *b-c-d* curve are interesting, the development was traced in the changes of the values of *b* and *d* in the *b-d* curve. These changing values are shown in Statement D below.

D.—VALUES OF COEFFICIENTS IN THE *B-D* CURVE FOR QUEBEC, MALES, 1881, AND CANADA, MALES, 1881-1931

Item	Values[1] of Constants When Fitted to $ab^{-x}d^{-x^3}$	
	b	*d*
Quebec, males, 1881	−0·0583175	−0·0000854
Canada, males—		
1881	−0·0474565	−0·0001255
1891	−0·0378477	−0·0001440
1901	−0·0268773	−0·0001685
1911	−0·0141361	−0·0002272
1921	−0·0108415	−0·0002263
1931	−0·0050476	−0·0002206

[1] Values are of logarithms.

Although no very definite point is indicated when $b^{-x} = d^{-x^3}$, it is important to know whether they become equal at an earlier age as time goes on, *i.e.*, whether the *d* part of the curve becomes as important as the *b* part at an earlier and earlier age. The rate at which this change takes place is some measurement of the rate of development. The age at which $b^{-x} = d^{-x^3}$ in the successive distributions examined is shown below:—

	Age at Which d^{-x^3} is as Important as b^{-x} in Curve $ab^{-x}d^{-x^3}$
Quebec, males, 1881	130·50
Canada, males—	
1881	97·25
1891	81·05
1901	63·15
1911	39·45
1921	34·60
1931	23·90

What is regarded as significant here is that in the Quebec curve the d^{-x^3} never becomes as important as the b^{-x} and the same may be said of Canada, 1881, for 97·25 years is very nearly at the end of the distribution. The *b* curve is always more important than the *d* curve. After this year the *d* rushes back at the rate of about 14 years a census until in 1931 it covers almost the whole age distribution. By 1951 at the same rate the d^{-x^3} would equal b^{-x} at the age of zero or below.

While no definite measurements are made in the foregoing figures, the course of development is clearly indicated. Consequently, it would seem to be quite reasonable to discuss along these lines what took place at each successive census.

As a first step it was desired to obtain an actual case where the age development was earlier than Canada, 1881. Before 1881 the ages for Canada were not given in quinquennial groups and it was considered better not to scale them into these groups for this purpose. Was it possible to find in 1921 or 1931 a case (from a county or city) where the age distribution was at an earlier stage than Canada in 1881? At first it would seem that the steepness of the age distribution would be a definite indication of early development, but we can obtain varying degrees of steepness even in life tables. The life table of the United States in 1881 was much steeper than that of Canada in 1931 and the only conditions that enter into a life table are varying death rates. A very high rate of natural increase and a very high rate of total population increase, provided that this total increase was not brought about by immigration, would undoubtedly give the distribution steepness. Chicoutimi county, Quebec, in 1931, and Shawinigan Falls, Quebec, in 1921, were found to fulfill these conditions, *i.e.*, the natural increase as indicated in the vital statistics and the past rates of population increase were very high. If the development was merely a matter of steepness they would be quite satisfactory as first stages. The fit of these to the various curves is shown in Statements E and F and Chart II.

E.—DISTRIBUTION BY QUINQUENNIAL AGE GROUPS OF THE MALE POPULATION OF SHAWINIGAN FALLS, 1921, AND CHICOUTIMI, 1931, WHEN FITTED[1] TO EXPONENTIAL CURVES, AND SHOWING THE ERROR OF EACH FITTING FROM THE ACTUAL POPULATION

Age Group	x	Shawinigan Falls, Males, 1921					Chicoutimi, Males, 1931				
		Actual	Distribution When Fitted to				Actual	Distribution When Fitted to			
			$ab^{-x}c^{-x^2}d^{-x^3}$	$ab^{-x}d^{-x^3}$	$ab^{-x}c^{-x^2}$	ac^{-x^2}		$ab^{-x}c^{-x^2}d^{-x^3}$	$ab^{-x}d^{-x^3}$	$ab^{-x}c^{-x^2}$	ac^{-x^2}
0- 4	1	1,580	1,591	1,269	1,146	1,599	1,717	1,824	1,615	1,564	1,344
5- 9	2	1,287	1,312	1,238	1,229	1,523	1,580	1,460	1,416	1,416	1,293
10-14	3	1,085	1,132	1,194	1,255	1,406	1,209	1,200	1,235	1,260	1,212
15-19	4	1,053	1,009	1,132	1,223	1,256	973	1,007	1,071	1,102	1,106
20-24	5	978	914	1,048	1,135	1,087	863	853	921	947	984
25-29	6	903	830	943	1,005	911	754	731	783	800	853
30-34	7	774	746	819	848	739	646	625	657	664	721
35-39	8	549	652	683	682	581	518	530	543	542	593
40-44	9	506	548	543	523	442	419	444	442	434	476
45-49	10	461	435	410	383	326	360	364	352	342	372
50-54	11	330	323	292	267	233	282	290	275	265	283
55-59	12	212	220	195	177	161	225	224	209	201	210
60-64	13	120	136	121	112	108	163	165	156	151	152
65-69	14	88	75	70	68	70	122	117	112	111	107
70-74	15	44	37	37	39	44	88	78	79	80	73
75-79	16	13	15	18	21	27	44	49	53	57	49
80-84	17	9	6	8	11	16	28	29	35	40	32
85-89	18	6	2	3	6	9	8	16	22	27	20
90-94	19	2	-	1	3	5	1	8	13	18	13
95-99	20	-	-	-	1	3	1	4	8	12	8
100 and over	21	-	-	-	-	1	-	2	4	8	4
Error		-	525	1,016	1,536	1,371	-	417	046	854	1,350

[1] Fitted for 16 cases.

F.—VALUES OF COEFFICIENTS IN VARIOUS CURVES FOR CHICOUTIMI COUNTY, MALES, 1931, AND SHAWINIGAN FALLS, MALES, 1921

Item	Values[1] of Constants When Fitted to				
	$ab^{-x}c^{-x^2}d^{-x^3}$			$ab^{-x}c^{-x^2}$	
	b	c	d	b	c
Chicoutimi, 1931	−0·1194040	0·0087212	−0·0004895	−0·0319428	−0·0037605
Shawinigan Falls, 1921	−0·1252102	0·0162281	−0·0010436	0·0612522	−0·0103820

Item	$ab^{-x}d^{-x^3}$		ac^{-x^2}
	b	d	c
Chicoutimi, 1931	−0·0562214	−0·0001556	−0·0056393
Shawinigan Falls, 1921	−0·0076135	−0·0004224	−0·0069769

[1] Values are of logarithms.

AGE DISTRIBUTION (MALE) OF SHAWINIGAN FALLS AND CHICOUTIMI AND DISTRIBUTION WHEN FITTED TO $AB^{-x}C^{-x^2}D^{-x^3}$

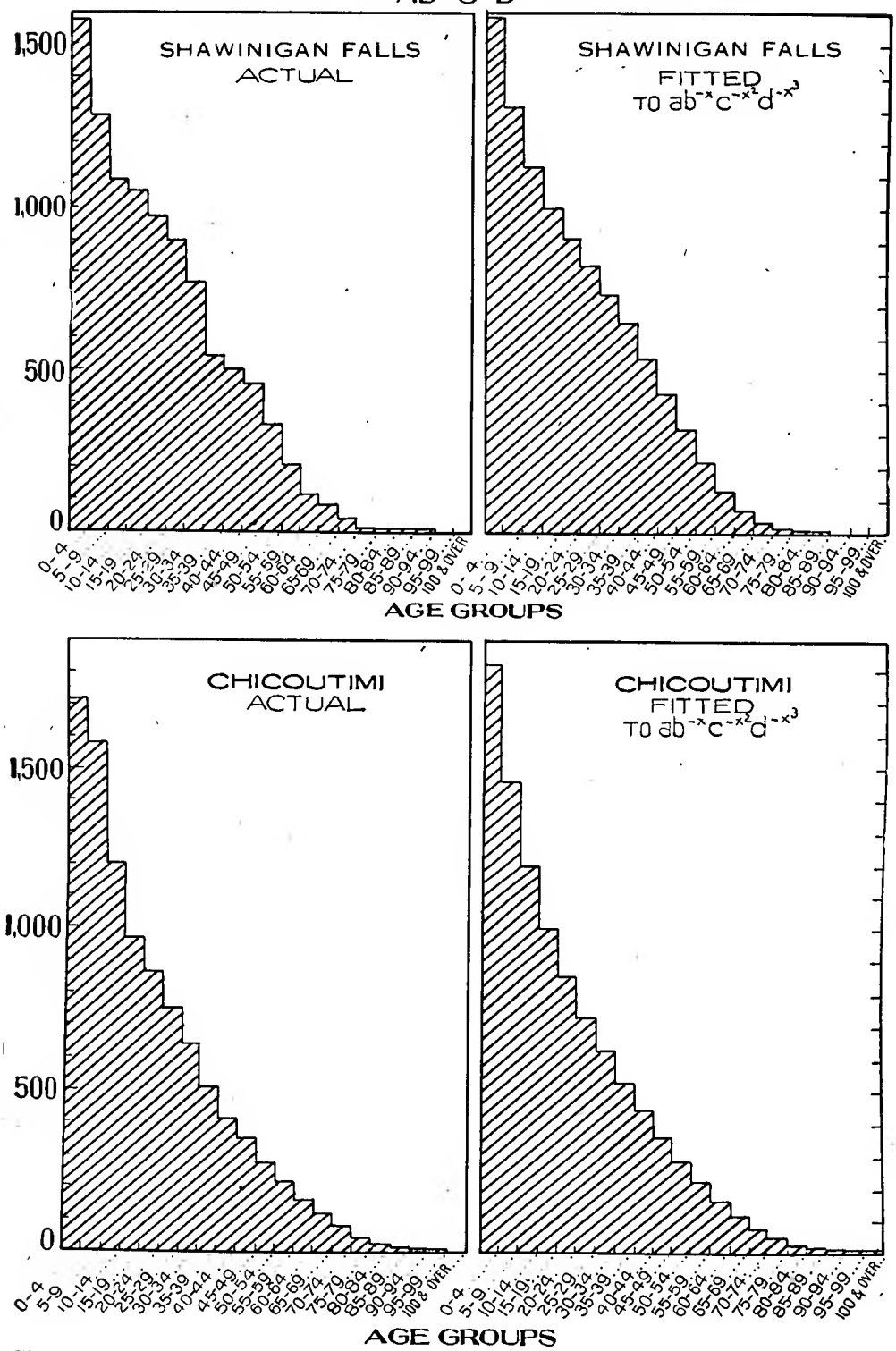


Chart 11

It is rather startling to find that these two places show a more advanced stage of development than Canada in 1881 and 1891. At first this is difficult to believe for it would seem that a constant large increase would keep a population permanently young. The fact that Shawinigan Falls and Chicoutimi are not young populations suggests that a large increase is not the sole determinant.

Age of settlement exerts a great influence on the shape of age distribution. Chicoutimi's advanced development can be attributed to this factor. When a place has been settled for a hundred years or more there is an appreciable number at the older ages, especially if there has been a large and steady natural increase. This explains the difference between Canada, 1881, and Chicoutimi, 1931. Canada in 1881 was over 100 years old in some places and so had aged, but the early population and the increase in that population up to 1830 were so small that the survivors exerted little influence on the age distribution of Canada, 1881.

There is another important factor determining the age distribution of Chicoutimi, 1931, and Shawinigan Falls, 1921, a factor that does not appear in a study of 1881 populations. We are apt to be misled by the fact that these two places show a very small proportion of immigrants. The rapid growth was not brought about by immigration but by something that would hasten the age distribution even more—a movement from other parts of the province. These people, moving only a short distance, are transplanted populations and tend to approximate the age distributions of the province. In this case, Shawinigan Falls and Chicoutimi approximate the distributions of Quebec in 1921 and 1931, respectively, and these were more advanced than that of Canada in 1881. On the other hand, Canada before 1881 grew to a considerable extent by an inward and outward movement. The inward movement consisted of persons for the most part between the ages of 20 and 30 and although they were largely taking the place of an outward movement at the same ages it is clear that as long as the movement continued it prevented ageing. Of course, a big inward movement followed by a long period of no movement would hasten the ageing process but as long as it continued and the incomers went out again later it would tend to keep the population young. This factor will be mentioned again in the study of the distribution of 1901.

Since Chicoutimi or Shawinigan Falls did not provide examples of early development, it was decided to take the case of Quebec males, 1881. This furnishes a very good example of early development. While the province had been settled since 1608, the real increase had taken place over a fairly short period before 1881 so that the proportions at the older ages were not important. The country had grown until this time mainly by natural increase and a very large one at that. Chart III shows that Quebec, 1881, is as good an example of the simple geometric progression curve as can be obtained. The *d* never becomes important, while the *c* does not become as important as the *b* until the age of 100. The *b* curve is the predominant curve throughout, *i.e.*, the reduction from group to group is mainly effected by simple geometric progression.

Canada, 1881 (Chart III) is very clearly a later stage of development than Quebec, but it also is decidedly *b;* likewise 1891, although the development had gone on still further. Up to 1901, the *b-c* curve fits as well as, or better than, the *b-d* curve but later on it shows a very poor fit. This is taken to mean that up till then the older ages were of minor importance, the process of development being shown by the relationship of the younger to the middle ages.

In 1901 we have a decidedly interesting age distribution. The simple *c* curve fits as well as one with a great number of constants (see p. 822); in other words, we have a case of a normal curve without much skew. If we take age zero as a sort of centre and measure a standard deviation from this age (instead of from the mean as in normal distribution) and use a table of normals we get a good fit to 1901. Further, if we take the two equations, ab^{-x^2} and $y_o e^{-\frac{x^2}{k}}$, equate $a = y_o$, $b^{-x^2} = e^{-\frac{x^2}{k}}$ and from this deduce the value of k, we find it is almost exactly the same as $2\sigma^2$ when σ is measured from age zero giving an indication that the result is independent of the method of fitting.

It is important to examine the causes which gave it this normal age distribution. In the first place, the age of settlement was not great enough to make the population elderly; in the second place, while 1901 followed a period of stagnation in population growth in Canada, this stagnation was not caused by the slowing up of natural increase but by emigration which means

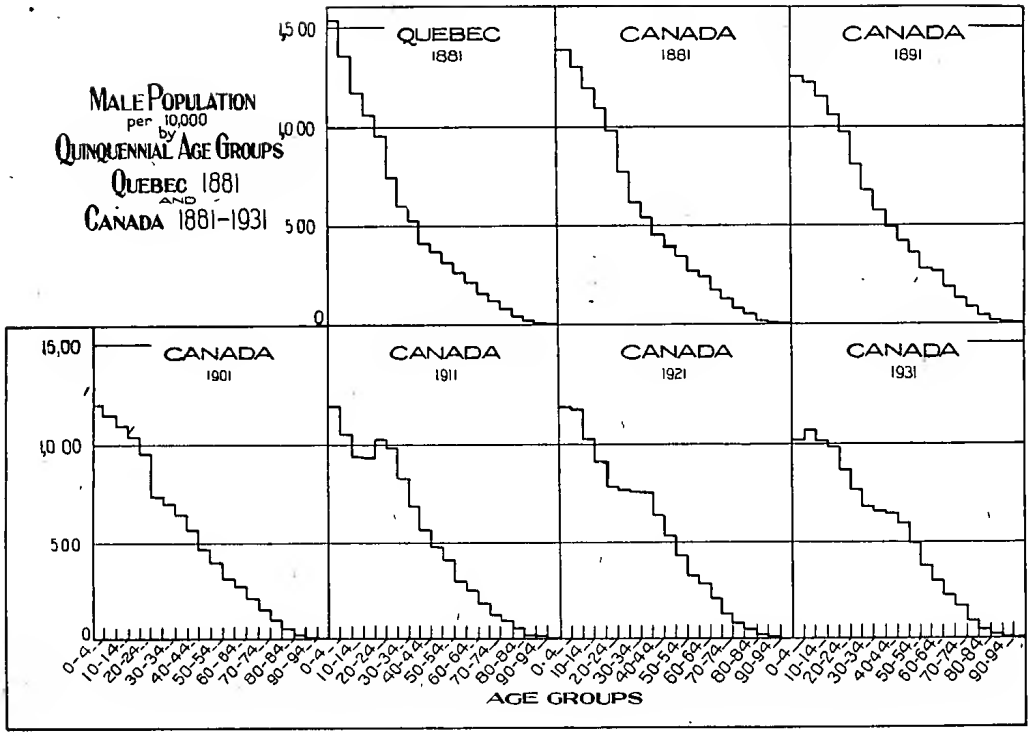


Chart III

emigration of young people, say, from 18 to 30. But just about four years prior to 1901 heavy immigration had set in and this immigration was also of young persons, mainly between 18 and 30. These had time by 1901 just to fill the hollows left by emigration, but no more than fill them. Had the census been taken in 1903 or 1904 the spaces would have been more than filled and, further, those that came in by 1897 would have been in later quinquennial age groups and the regularity would have been destroyed. The Census of 1901 so happened to have been taken at a date on which the age distribution was at a definite stage. It is interesting to dwell upon the large number of causes that brought about the distribution of 1901. Immigration helped but it would not have helped without the previous emigration, nor if it had been any greater or any less, nor if it had proceeded longer than it did. If the rate of natural increase had been less; if the country had been longer-settled, giving it a large proportion of elderly persons; if natural increase had been greater or the country a shorter time settled, the conditions would not have been fulfilled. The year 1901, therefore, has a most interesting age distribution. It suggests many of the causes influencing the development of this distribution and acts as a sort of control for earlier and later developments.

The year 1911 is also interesting. Although immigration had increased enormously in the preceding ten years, making the appearance of the age distribution very irregular, this did not seriously interfere with the fitting. The immigrants came in mainly in one or two quinquennial age groups. As the years went on, each year bringing in new arrivals, the "immigrant age distribution" spread over more age groups, the earlier arrivals becoming older and new ones keeping up the supply at ages, say, 20–24. At first, however, the hump caused by immigrant arrivals was only local to ages 20–30. This was the case in 1911. By 1921, and still more by 1931, this hump had spread at its base and had gone on to a later age. Fitting 1911 distribution with a b-d curve almost ignored this hump. Consequently, the equation $y = ab^{-x}d^{-x^3}$ gave a fairly good fit, particularly at the ages where this irregularity did not occur. With b and d in 1911, misfits occur only at the ages where they are expected to occur—defects at 10–19 and excesses at 20–29, nearly 60 p.c. of the misfits occurring at these ages. These excesses and defects almost cancel each other and this is considered here an indication of good fitting, *i.e.*, the equation is true to the fundamental shape.

By 1921 and 1931 the hump of immigration had spread and moved onward. The fit to the *b-c-d* eurve is better than ever, but with only three eonstants it is bad. There is no doubt that the distributions of 1921 and 1931 are not so simple as the distributions in previous years. The effeets of immigration tell on the later ages and of emigration on the ages from 20 to 30. These effeets are mixed up with the ageing proeess so that the real development of the latter is diffieult to traee. The result of this mixed proeess is that it beeomes doubtful whether the shape is exponential at all. An arithmetie eurve $y = a + bx + cx^2 + dx^3$ fits the distribution of 1931 just as well as $y = ab^{-x}c^{-x^2}d^{-x^3}$, but it is safe to eonelude that this arithmetie shape is not a stage in the development. Had it not been for immigration and emigration the exponential simple eurve would no doubt develop through degree after degree. The *b* and *c* would disappear and we would pass through a stage where $y = ad^{-x^3}$ would fit as well as ac^{-x^2} fitted in 1901. The distributions of 1921 and 1931 must be considered elasses, not stages, although the stages are indieated vaguely. Reasoning from this point of view, a development in these elasses themselves would be interesting to traee. Aeeordingly, the age distribution of males, 1931, was separated into the following elasses: (1) eounties showing a maximum population in 1851 and deereasing or stationary sinee; (2) counties with a maximum population in 1861 and so on, down to eounties whieh are still growing. The pereentage distribution of the male population in these groups is shown by quinquennial age groups in Statement G. Chart IV shows the eounties still growing and a total of the eounties reaehing maximum population before 1931.

The fundamental eonsideration in this elassifieation is that these eounties have beeome stationary, not beeause of stoppage of natural inerease, but beeause of emigration. In other words, the stoppage of inerease has oeeurred in the middle ages and the deaths (emigration being equivalent to death) in ages 20–30. All these distributions have the same general shape, *viz.*, a steep deseent from the 15–19 group to the 20–24 group and then an elliptieal shape. The shape is a double one. Eaeh of these shapes passes through its stages of development as deseribed by two simple eurves, but the stages of development of the distribution as a whole cannot be deseribed by simple eurves.

G.—PERCENTAGE DISTRIBUTION OF MALE POPULATION OF COUNTIES GROUPED ACCORDING TO YEAR IN WHICH THEY REACHED THEIR MAXIMUM POPULATION, BY QUINQUENNIAL AGE GROUPS, AND SHOWING NATURAL INCREASE PER 1,000, 1931

Age Group	Counties Reaching Maximum Population in							Counties Still Growing 1931
	1851	1861	1881	1891	1901	1911	1921	
All ages[1]	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
0- 4	11·60	10·27	9·07	9·49	10·57	10·53	9·57	10·22
5- 9	11·54	10·70	9·83	10·22	11·22	11·40	10·53	10·71
10-14	10·99	10·42	9·65	9·96	10·76	10·89	10·86	10·07
15-19	11·58	10·38	9·96	9·99	10·39	10·63	10·10	9·68
20-24	8·98	8·54	8·43	8·49	8·48	8·75	8·49	8·66
25-29	6·98	6·70	6·59	6·65	6·60	6·62	6·87	7·87
30-34	5·97	5·89	6·04	6·13	5·99	5·75	6·10	7·06
35-39	5·31	5·64	5·91	5·99	5·75	5·56	6·12	6·89
40-44	5·05	5·37	5·54	5·53	5·18	5·22	6·30	6·70
45-49	4·38	4·91	5·36	5·32	4·98	5·03	6·03	6·14
50-54	4·19	4·66	5·11	5·01	4·56	4·66	5·04	4·99
55-59	3·51	4·05	4·53	4·30	4·07	3·97	3·99	3·58
60-64	2·84	3·65	4·23	3·89	3·42	3·44	3·34	2·71
65-69	2·43	3·29	3·65	3·40	2·95	2·94	2·74	2·00
70-74	2·25	2·65	2·95	2·73	2·42	2·22	1·96	1·42
75-79	1·34	1·60	1·76	1·66	1·51	1·38	1·14	0·78
80-84	0·73	0·85	0·94	0·81	0·73	0·67	0·57	0·36
85-89	0·24	0·35	0·34	0·32	0·31	0·26	0·21	0·13
90-94	0·07	0·07	0·08	0·09	0·08	0·07	0·05	0·03
95-99	0·01	0·01	0·02	0·01	0·01	0·01	0·01	0·01
100 and over	-	-	-	-	-	-	-	-
Natural increase per 1,000, 1931	14·2	11·1	7·9	9·3	13·2	12·5	11·6	13·9

[1] Not stated age omitted.

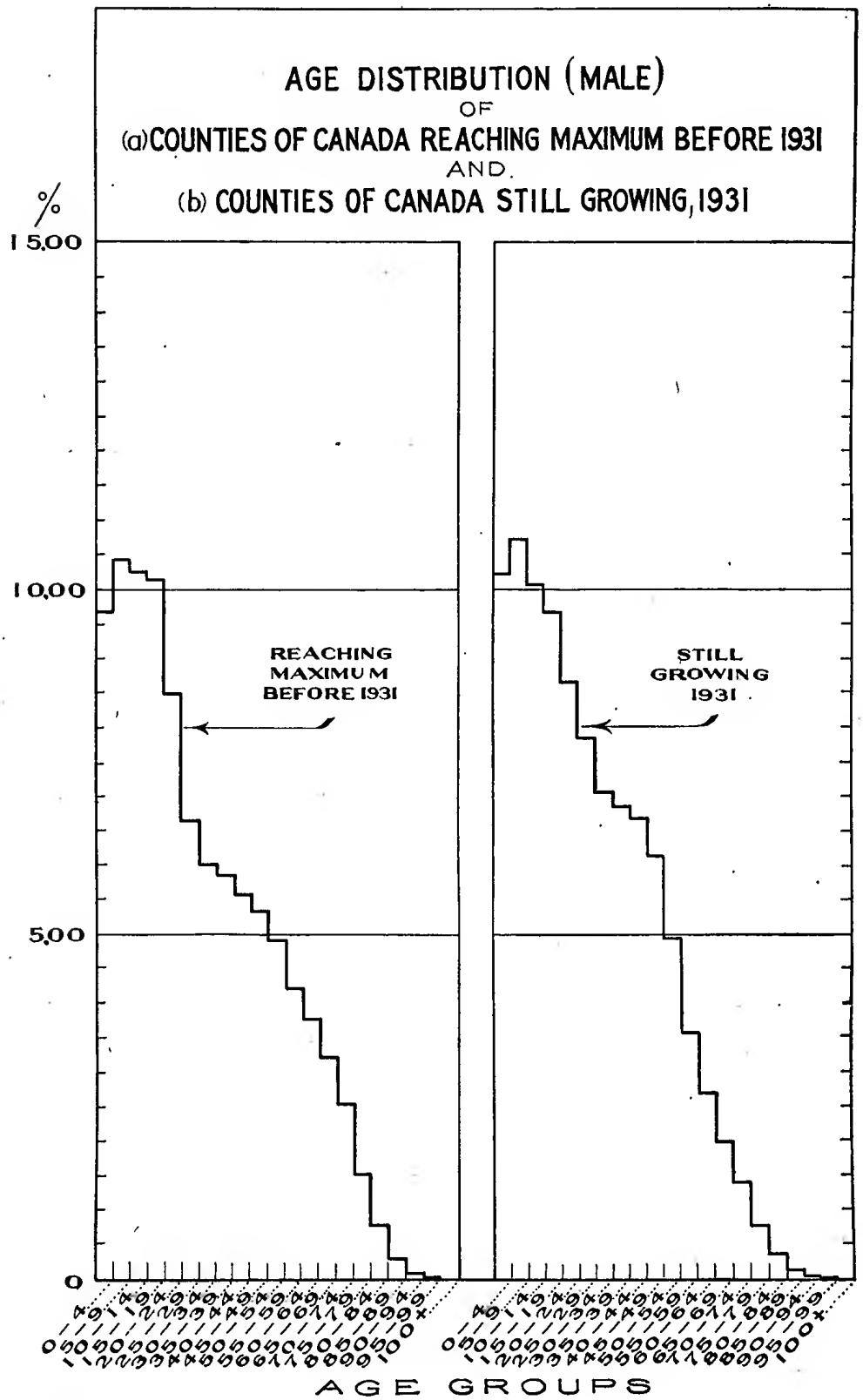

AGE DISTRIBUTION (MALE)
OF
(a) COUNTIES OF CANADA REACHING MAXIMUM BEFORE 1931
AND.
(b) COUNTIES OF CANADA STILL GROWING, 1931
%
15.00
10.00
5.00
0
REACHING MAXIMUM BEFORE 1931
STILL GROWING 1931
AGE GROUPS

Chart IV

Some indication of the difference between the counties reaching their maximum in different years is given by the following statement:—

H.—MEAN AGE, STANDARD AGE AND PERCENTAGES UNDER 25 YEARS OF AGE AND 65 YEARS OF AGE AND OVER, CANADA, MALES, BY GROUPS OF COUNTIES, 1931

Group of Counties[2]	Mean Age	Standard Age[1]	P.C. under 25	P.C. 65 and over
Chicoutimi, 1931	22·29	20·2	63·41	2·92
All counties, 1931	28·95	22·3	49·29	5·48
Counties still growing, 1931	28·55	22·0	49·33	4·72
All counties reaching maximum before 1931	30·49	23·4	49·09	8·50
Counties reaching maximum, 1851	27·84	22·5	54·70	7·07
" " " 1861	30·11	23·3	50·31	8·83
" " " 1881	31·77	23·8	46·93	9·76
" " " 1891	30·99	23·5	48·15	9·02
" " " 1901	29·41	23·2	51·43	8·01
" " " 1911	29·09	23·3	52·19	7·55
" " " 1921	29·64	23·0	49·54	6·68
Elgin, Ontario (included above), 1931	33·65	24·1	42·54	10·40

[1] For explanation of this term, see page 758.
[2] Male population.

The last two columns are particularly important since the first of them reflects the degree of flatness and the last the age of settlement. Elgin, Ontario, is shown because it might be expected to resemble a life table and was expected to show a late stage of development corresponding to Chicoutimi, 1931, at the other extreme but it did not come up to expectations in any way.

Throughout the whole series of steps of development the value of the second degree is paramount. It is decidedly the degree of the middle age groups from about 20 to about 65. The curve $y = ac^{-z^2}$ fits practically every year except at the extreme ages and, also, the very early stages. Since it is not possible to fit the age distribution of every area in Canada with a curve, it is well to make use of this in arriving at a more practicable basis of classification of the age distribution of these areas. Another point that can be made use of is that the curve $ab^{-z}d^{-z^3}$ gives a good fit to almost every stage, the four-constant curve merely improving the fit at the middle ages.

Since the c element in a four-constant curve seems to describe an historical feature in our population, it is important to establish certain limits to its range, and ages 25 to 64 would seem to be those limits. Between these ages a c curve was found to describe the shape of the age distribution throughout. The proportion of the age distribution that is included between these two limits determines whether the shape is convex or not and the percentages of the population before and after these limits determines whether the concavity leans towards youth or old age. As the proportion before 25 decreases, the value of b becomes smaller and the concavity before 25 becomes less marked; as the proportion after 64 increases, the value of d increases and the concavity after 64 becomes more marked. The classification of age distributions by means of three criteria (1) the standard age, (2) the percentage under 25 and (3) the percentage over 64, (where standard age is the root mean square deviation from age 24 of the population 25-64) would seem, then, to be an adequate classification which is at the same time simple enough to be practical. It is a classification used in preference to classifications by median age, mean age, quartiles, etc. If we know the standard age and the percentages below and above the ages 25 and 64, we have the general shape of the age distribution very adequately described. All three advance with the flattening and if any one of them is retarded it means some difference in the shape, *e.g.*, if the percentage under 25 is retarded while the others are advancing, it means an age distribution something like that of Canada in 1921 and 1931. If all three advance together, the process of development is smooth. If we classify the ages of certain areas in this way and arrange in order of the three-point index, we have a fairly simple method of classification of the stages of age development of these areas. Attributes due to age development can then be examined.

It is probably necessary to make some comments upon the reasoning underlying the assumptions that are made in Chapter III as to the causes of age development. These are: (1) the

age or length of settlement; (2) the past rates of natural increase; (3) the total population increase; (4) trend changes in 2 and 3. Cause 1 is reflected by the proportion of elderly persons; cause 2 by the proportion of very young persons; cause 3 by the proportion of middle-aged persons. Although the natural increase may be very large, there will be a very irregular distribution unless this natural increase has remained in the area or if the death rate has been very great and the large natural increase was entirely due to a very high birth rate. Such matters as longevity, differential death rate, etc., are important but the measurement is not fine enough to reflect them. They will be dealt with further on. It was assumed that over the period of observation the chief cause of irregularity at the middle ages was emigration. By irregularity here is meant a distortion of the general shape, not want of smoothness or local irregularities. The year 1911 had many local irregularities but showed an excellent fit just the same and had a very definite position in the stages of age development. Immigration seems to be a matter of filling in and for some time does not interfere with the course of development even though it overdoes this filling in. The hump of immigration has a definite shape and seems to travel along the age distribution like a superimposed population. As the hump spreads and travels to later ages it interferes more and more, but in 1931 it happens to be capable of separation from the rest of the age distribution. Chart V shows this separation. Canada, males, 1931, are divided into two classes, (1) Canadian born with Canadian-born parents and (2) the remainder of the population, *i.e.*, Canadian born with their children and immigrants with their children. A separation of Canadian born and immigrant alone does not mean much in this connection since a considerable number of the Canadian born are the children of immigrants. The distribution of the Canadian born with their children shows the stage of development reached by 1931. It has reached a stage later than 1891 but not as far advanced as 1901. The *b-d* curve gives the best fit and the *d* is as important as the *b* at about 65 years of age (see p. 834).

It seems striking that the Canadian population of 1931 less those directly or indirectly due to immigration should have an age development equivalent to that of Canada between 1891 and 1901. It must be remembered that Canada's 1931 total age distribution shows a natural stage of development when we take 1881 as a standard or base. Does this mean that in some way immigration caused a rejuvenation of the Canadian born? It may be advanced as a tentative explanation that the rejuvenation was not caused by immigration but by the enormous emigration from 1881 to about 1895. The emigrants at the time of emigration would range from 18 to 30 years of age. Their emigration would, by 1931, cause a shortage in persons (Canadian born) 54 to 80 years of age.

I.—PERCENTAGE DISTRIBUTION OF CANADIAN-BORN MALES OF CANADIAN-BORN PARENTS AND OF IMMIGRANT MALES AND THEIR CHILDREN, BY QUINQUENNIAL AGE GROUPS, CANADA, 1931

Age Group	Canadian-Born Males of Canadian-Born Parents, 1931	Immigrant Males and Their Children, 1931	Age Group	Canadian-Born Males of Canadian-Born Parents, 1931	Immigrant Males and Their Children, 1931
	p.c.	p.c.		p.c.	p.c.
0- 4	12·30	7·15	55–59	3·19	4·41
5- 9	12·34	8·37	60–64	2·49	3·50
10–14	11·31	8·47	65–69	1·91	2·70
15–19	10·57	8·70	70–74	1·39	1·99
20–24	9·06	8·05	75–79	0·79	1·12
25–29	7·32	8·06	80–84	0·38	0·53
30–34	6·37	7·50	85–89	0·14	0·19
35–39	6·01	7·60	90–94	0·03	0·04
40–44	5·42	7·90	95–99	0·01	0·01
45–49	4·83	7·55	100 and over	-	-
50–54	4·12	6·14			

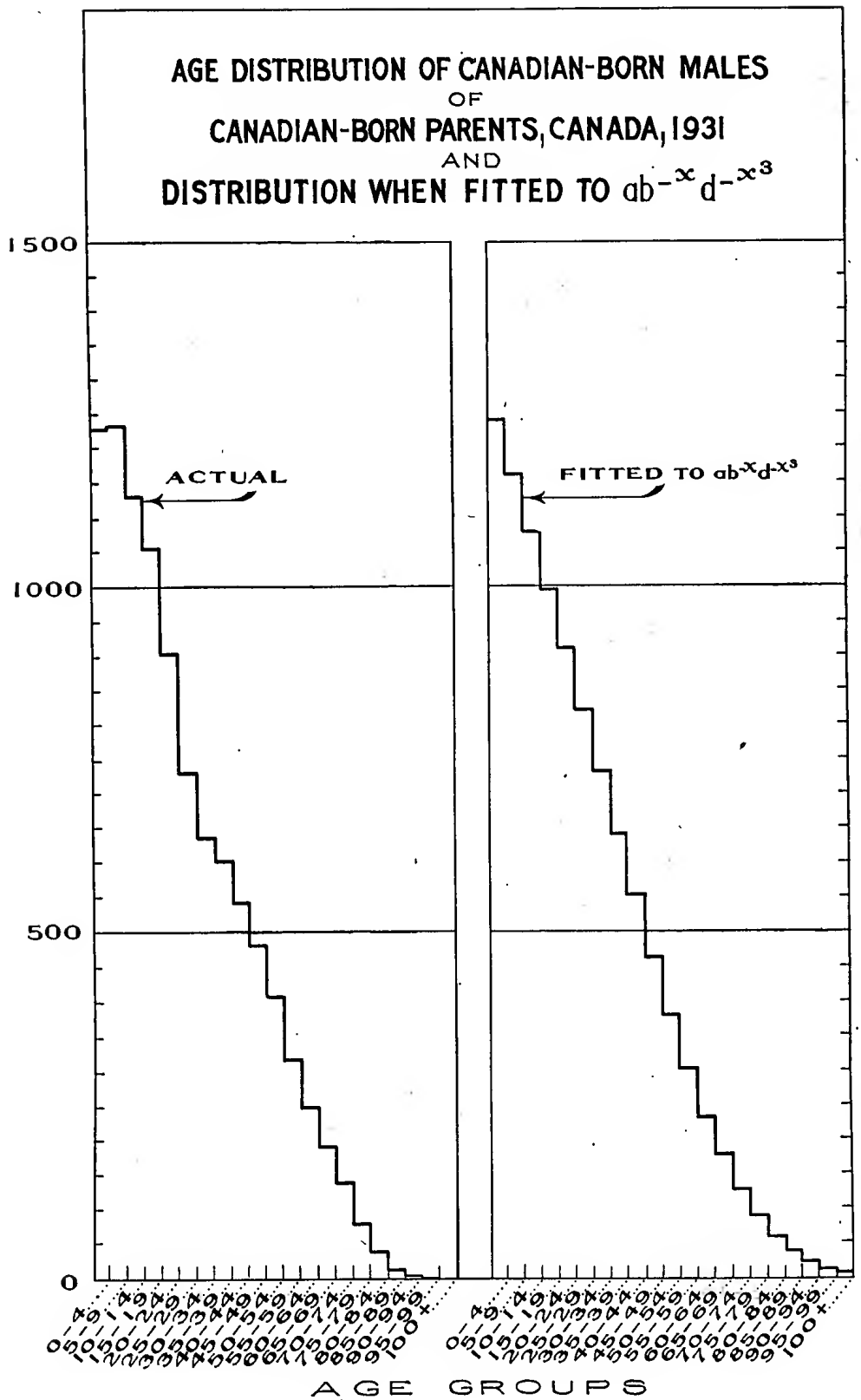


Chart V

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J.—DISTRIBUTION OF CANADIAN-BORN MALES OF CANADIAN-BORN PARENTS WHEN FITTED TO *B-C-D*, *B-D*, *B-C* AND *C* CURVES, BY QUINQUENNIAL AGE GROUPS, 1931

Canadian-Born Males of Canadian-Born Parents

Age Group	x	Actual	Distribution When Fitted to (1) $ab^{-xc^{-x^2}d^{-x^3}}$	(2) $ab^{-xd^{-x^3}}$	(3) $ab^{-xc^{-x^2}}$	(4) ac^{-x^2}
0- 4	1	1,230	1,354	1,243	1,191	1,191
5- 9	2	1,234	1,187	1,161	1,157	1,157
10-14	3	1,131	1,058	1,079	1,102	1,101
15-19	4	1,057	954	996	1,029	1,028
20-24	5	906	865	911	942	942
25-29	6	732	784	823	840	845
30-34	7	637	708	733	745	744
35-39	8	601	631	642	643	643
40-44	9	542	554	552	544	544
45-49	10	483	475	464	452	452
50-54	11	412	396	381	368	368
55-59	12	319	319	305	294	293
60-64	13	249	248	235	230	230
65-69	14	191	184	179	176	176
70-74	15	139	129	130	133	133
75-79	16	79	86	92	98	98
80-84	17	38	54	62	71	71
85-89	18	14	32	40	50	50
90-94	19	3	17	25	35	35
95-99	20	1	9	15	24	24
100 and over	21	-	4	8	16	16
Error			662	648	774	775

(1) $\text{Log } y = 3{\cdot}1989106 - 0{\cdot}0729929x + 0{\cdot}0061630x^2 - 0{\cdot}0004086x^3$
(2) $\text{Log } y = 3{\cdot}1228094 - 0{\cdot}0283292x - 0{\cdot}0001727x^3$
(3) $\text{Log } y = 3{\cdot}0803044 + 0{\cdot}0000137x - 0{\cdot}0042557x^2$
(4) $\text{Log } y = 3{\cdot}0802032 - 0{\cdot}0042549x^2$

Now, age of settlement, rate of natural increase, rate of total increase and trend changes in these two rates are regarded as the fundamental principles governing the development of age distribution, *i.e.*, the smooth trend of development. Fluctuations in the death rate, birth rate, etc., cause irregularities, but they do not interfere with the development, if the trend is resumed. A great deal is being said about such phenomena as a defect in the first quinquennial age group, *i.e.*, as being smaller than the next. This happened to the Canadian age distribution in 1931 for the first time. While this may be symptomatic its significance can easily be overrated. If 1941 shows a continuation of this it will become significant, but it could easily be accounted for in 1931 without concluding that it is a stage in development. The very large immigrant population came into Canada in a very short period and as adult single males. For a few years they did not materially affect the birth rate, but after six or seven years in Canada they married or brought in their wives—and, it is important to remember, they did this in such a short time that the movement was almost instantaneous. The result was a sudden huge increase in the birth rate. Again there was a secondary movement of this kind around 1921 after the War. The birth rates owing to these movements were abnormal—not perhaps in relation to some other countries, but in relation to the regular trend of Canada. It was "out of trend." A resumption of normality alone, to say nothing of the influences of the depression, would bring about a smaller number at ages 0–5 than 5–9. Further, it is familiar experience that violent fluctuations in one direction are followed by a swing which goes too far in the other direction. It is this that makes a smooth fitting significant since it ignores these fluctuations and considers only a trend. It may happen that the downward move in the earlier ages will continue—we cannot tell—but that it will be as rapid as the 1931 phenomenon indicates is very improbable. It is clear that five years free from child epidemics (which is possible) followed by five bad years, would bring about a larger 5–9 group even in a stationary population with a complete reversal of this in the next five years.

CANADIAN LIFE TABLES

by

N. Keyfitz

36755—53½

INTRODUCTION

METHOD OF CONSTRUCTION

(1) **Population Involved.**—Canadian Life Table No. 1 takes account of all persons who were included in the Census of 1931 as residing in the nine provinces of Canada. The population and deaths of the Yukon and the Northwest Territories were excluded as it was felt that their vital statistics are not yet on the same reliable basis as those of the rest of Canada. Their omission leaves 10,362,833 out of a total population of 10,376,786 for the "exposed to risk".

(2) **Tables Constructed.**—The original intention was to construct a separate table for each sex for each province, and for each sex for Canada, making twenty tables in all, for 1931. This scheme was modified, because there was considerable room for doubt as to the meaning that could be attached to tables for groups as small as some of the provinces singly. (See section on "Precision", p. 841.) In the Maritime and Prairie Provinces individually the deaths fluctuated widely from year to year, even when taken in broad age groups. There was some doubt as to whether British Columbia offered a sufficiently large number of exposures for the construction of a reliable table (*i.e.*, a table that would give with precision the probabilities of death in other calendar years than the ones chosen) but as there was no other province with which it could be conveniently amalgamated it was graduated separately. Therefore the following tables were constructed for each sex: Canada, the Maritimes, Quebec, Ontario, the Prairie Provinces and British Columbia. Death rates at quinquennial age groups are given for the individual Maritime and Prairie Provinces.

Though no Dominion-wide vital statistics existed in 1921, there was a Registration Area for births and deaths that included eight out of the nine provinces. A table has been prepared for this area for 1921, both for males and for females; it is not, of course, comparable with the table for 1931, since the second largest province, Quebec, was omitted, and since the mortality of Quebec is quite different from that of the rest of Canada. For purposes of comparison a table has been compiled for the same area on the basis of deaths of 1931.

(3) **Exposed to Risk.**—No adjustment was made to obtain the mean population for the years 1930, 1931, 1932, to a greater degree of accuracy than was given by the census population for the date June 1, 1931. In view of the extremely uneven nature of Canada's growth during the decade 1921–31, it was believed that a more or less elaborate method such as that of A. C. Waters would give no better result than the unadjusted census figures. For a country of relatively stable population such a method may be suitable; for Canada its applicability is doubtful.*

(4) **Not Stated Ages.**—As there is, in general, a larger proportion of persons of "not stated" age among the dying than among the census population, a slight error of under-statement in the mortality rates would result from the uniform disregard of the "not stated" age classification. The unstated ages were therefore distributed throughout the various age groups by means of a factor applied to the rates of mortality.

(5) **Radix.**—It has been observed in the censuses of Canada as well as of other countries that the number of individuals at the younger ages of life, particularly ages 0, 1 and 2, tends to be under-stated and therefore it has been the custom to make use of birth statistics in the calculation of the population exposed to the risk of death at these ages. At the same time it was felt that it would be wise to make some tests of the accuracy of birth registrations before proceeding to calculate the probabilities of death at the ages 0–5. This is particularly important for the present purpose if the tables for the different geographic areas of Canada are to be compared. In a separate section will be found the probabilities of death by months for the first year of life and by years for ages 1–5, for Canada and its five regional divisions, for males and females, to correspond to each of the tables here presented. The columns l_x, d_x and $^{\circ}_{x}$ are also carried back to age 0. Here the "number living" column is started at 100,000 at age 5, provisional crude q_2, q_3, q_4, being used along with crude q_5, q_6, q_7 and q_8 to obtain final q_5.

*In the Life Table for England and Wales for 1931, where the period from census date to mid year was 65 days, and population more stable than in Canada, Sir Alfred Watson, Government actuary, concludes ". . . any adjustment of the census figures of 1931 to approximate the population recorded at each age to that existing at 30th June of that year would be unlikely to produce any more dependable figures than those of the census itself."

(6) Grouping.—There has been considerable discussion of the effect of grouping in osculatory graduation*; different authorities have held different views of the relative suitabilities of the five possible arrangements. The grouping 5–9 is used here for the following reasons:—

(i) It balances the numbers 5 and 8 against 10, putting into different groups the most popular number and the two next most popular ones.

(ii) It is the grouping most frequently adopted for the presentation of age statistics, and therefore most suitable for a method which may be used for the construction of comparable life tables for other divisions of the Canadian population.

(iii) It is the grouping in which the statistics are already aggregated, though they are also given for single years of age.

(iv) In the course of the tests that were performed no other grouping seemed to have any striking advantage over it.

(7) Method of Graduation.—The method followed was that of George King, which consists in obtaining pivotal values at quinquennial intervals and interpolating by a third degree osculatory formula between these values. This method has been found suitable for most life tables made from population statistics; it gives values which are very smooth and at the same time reflect all the essential characteristics of the original data. A slight departure was made from the usual custom by the introduction of an unsymmetrical formula for the pivotal value at the beginning of the curve, *i.e.*, at age 7. As the unsymmetrical values used came in all cases very close to the crude values it was hoped that greater accuracy would be obtained by thus shortening the interval over which it has been the practice to use Lagrangian interpolation.

(8) Formulae.—Briefly summarized, King's method of graduation using third differences is as follows:—

After the aggregation of population and deaths into five-year age groups pivotal values of numbers living and dying are calculated by the now well-known formulae

$$u_{12} = \cdot 216\, w_{10} - \cdot 008\,(w_5 + w_{15}),$$
$$u_{17} = \cdot 216\, w_{15} - \cdot 008\,(w_{10} + w_{20}), \text{ etc.}$$

where u_x is the number between age x and $x + 1$ and w_x the number between x and $x + 5$. The number dying at the pivotal ages is divided by the number living and from the result, which is m_x (the central rate of mortality), the rates q_x, where $q_x = \dfrac{2m_x}{2 + m_x}$, are worked out.

From the first, second and third differences between the pivotal values (Δq_x, $\Delta^2 q_x$, $\Delta^3 q_x$) the first, second and third differences between consecutive q_x's (δq_x, $\delta^2 q_x$, $\delta^3 q_x$) are worked out for each block of five values 7–11, 12–16, etc., by the formulae

$$\delta q_x = \cdot 2\Delta q_x - \cdot 08\Delta^2 q_{x-5} - \cdot 016\Delta^3 q_{x-5},$$
$$\delta^2 q_x = \cdot 04\Delta^2 q_{x-5} - \cdot 016\Delta^3 q_{x-5},$$
$$\delta^3 q_x = \cdot 024\Delta^3 q_{x-5},$$

and the values of q_x are filled in by addition.

(9) Younger Ages.—The unsymmetrical third degree formula

$$u_7 = \cdot 192\, w_5 + \cdot 016\, w_{10} - \cdot 008\, w_{15}$$

gave a satisfactory value for the population and deaths of age 7. Thus the values of q_x at ages 7, 12, 13 were at hand. As it had been decided to commence the table at age 5, a value of q_5 was obtained from the crude rates by the seven-term smoothing formula below where q'_4, q'_5 . . . . . q'_8 use census figures for the exposed and q'_2 and q'_3 birth registrations.

$$q_5 = \frac{-2q'_2 + 3q'_3 + 6q'_4 + 7q'_5 + 6q'_6 + 3q'_7 - 2q'_8}{21}.$$

A third degree curve $q_x = \alpha + \beta x + \gamma \dfrac{(x)(x-1)}{\lfloor 2} + \delta \dfrac{(x)(x-1)(x-2)}{\lfloor 3}$ was put through the four values then available, q_5, q_7, q_{12}, q_{13}. Tests showed that the points on this curve passed very close to the crude values†.

* Grouping and interpolation are for the purpose of distributing inaccuracies due to the tendency of the enumerated population to concentrate on even numbers and to smooth out roughness due to insufficient numbers exposed at each age.

†For the twelve tables for Canada and its regional divisions, the total net deviation of the q_x found by this method from the crude q'_x for ages 5 to 12 was ·00046; the sum of the absolute values of the deviations was ·01348.

(10) Termination of Tables.—No universal method of graduating the older ages of a life table has yet come into use, and most of the existing methods have a considerable measure of uncertainty and arbitrariness. Nor does there seem to be any pressing need for extreme accuracy in the graduation of the ages over 90, since for one thing few persons are exposed and, therefore, the law of large numbers does not come into effective operation, and for another, such people as are alive or dying at those ages include many cases of over-statement of age which can be separated by no mathematical method from the accurate data. It has been claimed that this over-statement occurs to the greatest extent in less educated communities. This tendency shows itself in the completed table in unusually favourable mortality at the ages over a hundred and, therefore, in a drawing out of the life table to a very old age. For example, in the United States' Life Tables of 1910, the Negro males' table ended at the age of 107 and the table for White males at the age of 105. In 1930 the White females' table for the United States ends at 105, the Negro females' table at 108. At all points of the table below 79 for 1910 males and below 74 for 1930 females, the White population shows far more favourable mortality than the Negro population—at most places less than one-half the risk of death. It is hard to account for this differential at the ages over a hundred except on the supposition of an over-statement in the census and death records on the part of the Negroes.

The procedure often followed for the termination of a life table, when the main body of the table is constructed by the method of George King, is to pass a curve through ages 86, 87, 92, and some age arbitrarily taken (105, 110, or 115) as the extreme upper limit of life at which the rate of mortality is assumed to be unity, or the probability of dying within a year certainty.

In these tables no such upper limit has been used. It was felt that if the older ages had any significance at all (for the purposes of comparisons between different regions of Canada, for example) the tables should be allowed to terminate themselves. Besides, in these tables, as in the English Life Tables of 1931, it was found that in many cases a fourth degree curve put through the points mentioned above did not increase monotonically between age 92 and 110, but decreased and increased again, or, in at least one case, over-shot the mark of 1·00000 before age 110 and reached 1·00000 at 110 from above. These results were so absurd as to be immediately rejected. The method actually used was felt to be somewhat less artificial; it consisted in putting a fourth degree curve through the points for ages 81, 86, 87 and 92, and then following this curve for the construction of the l_x and d_x columns as far as was necessary. Thus the curve of the probability of dying reached the value of 1·00000 at different ages for the different tables; the actual mortality involved in the table dictates the age at which the chances of dying in the course of a year would be certainty. For most of the tables for Canada and its regional divisions, this point was reached between the ages of 108 and 115; for one or two of the tables, at somewhat higher ages. In the two or three cases where the pivotal value of 92 was so low that the entire curve was pulled down and became negative, the value at this point was disregarded and a third degree curve put through the points 81, 86 and 87. In no case was a pivotal value beyond 92 used, as it appeared on examination that the pivotal values for age 97 had little relation to the mortality that could reasonably be expected in the various regions for the two sexes. Hence no figures of population or deaths beyond age 100 are involved in any of the following tables; in all cases rates beyond those ages are projections of earlier mortality.

FUNCTIONS TABULATED AND THEIR USES

(11) Principal Functions Tabulated.—For Canadian Life Table No. 1, Males and Females, the principal functions tabulated are:—

(1) l_x, the number living at the beginning of the year of age in an artificial population which contains 100,000 persons at age 5,

(2) d_x, the number dying during the year of age x,

(3) q_x, the probability of dying during the following year for a person aged x,

(4) $\mathring{e}_x$, the complete expectation of life of a person alive at age x,

(5) p_x, the probability of living to the end of the year of age for a person alive at age x,

(6) L_x, the average number of persons of age x at any given moment in the artificial population of the life table,

(7) T_x, the total number of persons age x or older. We have $T_x = \sum_{t=o}^{\omega-x} L_{x+t}$.

For the regional tables only columns 1, 2, 3 and 4 above are tabulated.

In addition the probabilities of dying at quinquennial ages are shown for the individual Maritime and Prairie Provinces (Table 3). Comparisons are given between Canada and its regional divisions (Table 4) by means of the function $1-{}_5p_x$, the probability of dying within five years. Comparisons are shown in considerable detail between the Canadian Life Table No. 1 and the official tables of England and the United States (Table 5); in somewhat less detail between Canadian Life Table No. 1 and the rates of mortality of a number of other countries (Table 6). In addition there are presented tables for the Registration Area of 1921, for the deaths of 1921 and 1931 (Table 9); finally, the function q_x, the chance of dying in a year, is given for the deaths of the decennium 1921 to 1931 (Table 10). Of this last table more will be said later. In the Appendix, the populations and deaths relevant to the tables for Canada and its regional divisions and to the tables for the Registration Area of 1921 are assembled from the original volumes of the census and the vital statistics.

Since in certain calculations (*e.g.*, of the net reproductive ratio), the value of l_9 is necessary, it is given below, calculated by the method of the English Life Tables:—

Regional Division	Males	Females
Canada	113,035	110,449
Maritime Provinces	112,978	110,585
Quebec	118,329	114,659
Ontario	110,231	108,214
Prairie Provinces	110,020	107,925
British Columbia	107,951	106,535

The exposed are found from births for ages 0–3.

(12) Assurance and Annuity Calculations.—Contrary to the popular notion, the assurance companies do not, in calculating the value of a whole-life assurance, find the expectation of life for the given age and then proceed to find the present value, discounted for the term of the expectation of life, of the amount of the assurance. This would give an answer which is considerably lower than the true value. What the companies do is to analyse the probabilities in detail; they take the probability of a man dying in the year immediately following the inception of the assurance, multiply the amount at risk by this probability and by a factor which discounts the amount of the assurance from the end of the year (the time at which all assurances are theoretically payable). Then account is taken in the same way of the probability of the assured dying in the second year of the contract, and the amount at risk is multiplied by the probability of death for that year and by a factor which discounts this amount over a period of two years. Similar calculations are made for each of the subsequent years of life and the results are added. In an annuity for life the same process is used except that instead of the probability of dying the probability of living is used throughout. In the same way if the annuity or assurance is to continue for only a limited term of years, and not for the whole of life, only the probabilities for the years involved are used.

(13) Commutation Columns.—In order to avoid the tedium of carrying out each calculation in the manner described, commutation columns were invented. The basis of the commutation table is that the number living as given by the l_x column of the life table is multiplied by v^x and the number dying is multiplied by v^{x+1} giving D_x and C_x. These quantities are added from the end of the table backward, giving the columns $N_x = \sum_x^{\omega} D_x$ and $M_x = \sum_x^{\omega} C_x$ respectively. Then we have for the value of a whole-life assurance the quantity $\frac{\sum_{t=o}^{\omega-x} C_{x+t}}{D_x} = \frac{M_x}{D_x}$; of a whole-life annuity $\frac{\sum_{t=o}^{\omega-x} D_{x+t}}{D_x} = \frac{N_x}{D_x}$. To find the value of an n-year term assurance or term

annuity we use $\frac{\sum_{o}^{n-1} C_{x+t}}{D_x}$ and $\frac{\sum_{o}^{n-1} D_{x+t}}{D_x}$ respectively, *i.e.*, we add the discounted probabilities for the relevant term of years. But this can be obtained by merely deducting from the whole-life numerator the payments from the time when the annuity or assurance stops to the end of life, and thus we finally obtain the extremely convenient formulae $\frac{M_x - M_{x+n}}{D_x}$ and $\frac{N_x - N_{x+n}}{D_x}$ the actuarial symbols for which are $A^1_{x:\overline{n}|}$ and $a_{x:\overline{n}|}$. $A_x = \frac{M_x}{D_x}$ gives the cost of a whole-life assurance of one dollar if the payment is to be in a single instalment at the initiation of the contract. In the same way $a_x = \frac{N_x}{D_x}$ is the value of a whole-life annuity. But on this continent most assurances are paid for by means of life or term annuities. Thus the whole-life assurance, if the payment therefor is to be by means of a whole-life annuity, costs the buyer $\frac{A_x}{a_x} = \frac{M_x}{N_x} = P_x$ each year he is alive.

In the same way if the payments are to continue not for life but only for a specified term, (n) of years, as in the popular 20-payment life policy, the division is not by N_x but by $N_x - N_{x+n}$, giving ${}_nP_x = \frac{M_x}{N_x - N_{x+n}}$ for the n-payment life and $P^1_{x:\overline{n}|} = \frac{M_x - M_{x+n}}{N_x - N_{x+n}}$ for the n-year term policy. In the case of a pure endowment, we merely need to multiply the probability of a man living the term in question by the discounted value of the sum of money which he will get if he does live. In symbols this is equal to $v^n {}_np_x = v^n \frac{l_{x+n}}{l_x} = \frac{v^{x+n} l_{x+n}}{v^x l_x} = \frac{D_{x+n}}{D_x}$. If the payment for the pure endowment is to be by an annual premium for n years that premium is equal to $\frac{D_{x+n}}{N_x - N_{x+n}}$, the symbol for which is $P_{x:\overline{\frac{1}{n}}|}$.

In the case of an ordinary endowment assurance policy, the amount of the assurance is to be paid either in the event of the assured's dying during n years, or living to the end of that period; the annual premium for this benefit is simply the sum of the term assurance and the pure endowment, or $P^1_{x:\overline{n}|} + P_{x:\overline{\frac{1}{n}}|} = \frac{M_x - M_{x+n} + D_{x+n}}{N_x - N_{x+n}}$.

Thus the whole-life premium on the life of a man of 32 is $\frac{M_{32}}{N_{32}}$ per unit; the 20-payment life premium for a man of 47 is $\frac{M_{47}}{N_{47} - N_{67}}$ per unit; a 30-year endowment assurance for a man of 40 is $\frac{M_{40} - M_{70} + D_{70}}{N_{40} - N_{70}}$. If a man of 32 wants to be insured for 17 years and to pay premiums on the assurance for 12 years, the annual premium is $\frac{M_{32} - M_{49}}{N_{32} - N_{44}}$. If a man of 35 wants a life annuity to start at age 60 on which premiums are to be paid until age 54 the annual premium is $\frac{N_{60}}{N_{35} - N_{54}}$.

(14) A Technical Consideration.—These figures, it is to be emphasized, are the net rates that would be required for the assurance of a randomly chosen group of the Canadian population. They apply neither as office rates (*i.e.*, rates constructed to include administration expense, expense of acquisition, etc.) nor even as net rates for an actual assurance office since its assured are not, in general, typical of the general population of Canada but are, on account of the method of their selection, a special class. In fact, so finely does selection act in this matter, that holders of different types of policies have appreciably different mortality.

PRECISION OF TABLES

The value of a set of tables such as these lies principally in the fact that they include a sufficiently large number of exposures to the risk of death to enable one to affirm that the same rates, or very nearly the same rates, will apply for the same population in other years than the ones used in their construction. To test the degree to which this holds for the tables here constructed, two tables were made up for the Registration Area of 1921, about the year 1931; one

including only the deaths of 1931 itself, the other taking account of deaths in the three-year period 1930–32. The pivotal rates of mortality (q_x) are given below, for the two sets of deaths.

I.—ANNUAL RATES OF MORTALITY (q_x) FOR THE REGISTRATION AREA OF 1921, BASED ON DEATHS OF 1931 AND 1930-32

Age	Males		Females	
	Deaths of 1931	Deaths of 1930-32	Deaths of 1931	Deaths of 1930-32
7	·00183	·00191	·00127	·00142
12	·00134	·00145	·00129	·00131
17	·00231	·00242	·00186	·00201
22	·00299	·00311	·00291	·00294
27	·00328	·00328	·00324	·00336
32	·00343	·00331	·00353	·00357
37	·00392	·00411	·00447	·00434
42	·00508	·00506	·00434	·00488
47	·00682	·00688	·00616	·00629
52	·01020	·01015	·00833	·00882
57	·01495	·01514	·01279	·01324
62	·02170	·02217	·01947	·01918
67	·03412	·03491	·02860	·03024
72	·05256	·05458	·04628	·04751
77	·08378	·08747	·08064	·08060
82	·13025	·13550	·12027	·12480
87	·19147	·19634	·17332	·18017
92	·27078	·28641	·23554	·25857

It is plain that the two sets of rates, both for males and for females, are very similar.

Such inaccuracy as exists (in the sense of deviation from the "true" rates for an infinite population of which the population actually used is a random sample) is due principally to three causes:—

(i) First and foremost to the insufficiency of the numbers involved. The laws of averages only come partially into play. If, for example, there are 1,000 persons exposed to a risk of death which is exactly (let us say) ·01, then the expected number of deaths is 10. The chance is 1/3, however, that the observed number of deaths will be more than 13 or less than 7, that is 30 p.c. in error. If there are 1,000,000 persons exposed to the same risk (·01) the expected deaths are 10,000, but here the chance is only 1/3 that the observed deaths will be greater than 10,100 or less than 9,900, *i.e.*, in error by 1 p.c. By multiplying the number of persons exposed by 1,000 we have increased the precision thirtyfold. Roughly speaking, where the probability of dying is small the precision is proportional to the square root of the exposed. Since England has four times the population of Canada, her probabilities of dying can be reckoned twice as accurately as ours.

(ii) Mis-statements of age in the census and death records. Many of these mis-statements, such as the tendency to concentrate on even numbers, balance out* and are cancelled in the process of graduation; others that bias the result on one side or the other cannot be eliminated by any mathematical means whatever.

(iii) Omissions in the census and death statistics. It may be asked whether in view of the possible errors in the probabilities of dying, the fundamental function of all the tables, the various functions based on the probabilities have been taken out to too many places of decimals. Certainly some, *e.g.*, commutation columns, seem unnecessarily refined. The reason for such elaboration of rough data is partly technical and partly traditional. The technical reason is the desirability of obtaining smoothness in the final result so that mathematical processes such as differentiation and integration may be facilitated. If a curve is very rough its derivative (obtained as the difference between consecutive points) has no meaning. That is why q_x, the probability of dying, is presented to five decimal places (reduced from seven) when the original data could be adequately expressed by four. Another consideration is that by running a calculation from the original data through to the final result with only the accuracy of the former at each stage we would be introducing a cumulative error in computation.

* See 1931 Census Monograph *The Age Distribution of the Canadian People* by M. C. MacLean, also 1931 Census, Vol. I, Chap. III.

The two objectives in the construction of a life table are: (i) fidelity to the original data and (ii) smoothness. (i) is measured by calculating the expected deaths at each year of age (by multiplying the number of persons enumerated in the census by m_x, the central death rate) and comparing with the actual deaths in the vital statistics for 1930–32. (ii) is measured by the third differences of q_x. For the purpose of (i) the q_x of the final table (to five decimal places) was used to obtain m_x; for (ii) the originally calculated q_x (to seven places) was used, and the resulting third differences were cut down to five places. For (i) the expected deaths have been multiplied by three to compare directly with actual deaths for the three-year period 1930–32. The results of the tests are given below for Canadian Life Table No. 1, males and females.

II.—COMPARISON OF ACTUAL DEATHS, CANADA, 1930-32 AND EXPECTED DEATHS BY CANADIAN LIFE TABLE No. 1, (A) MALES, (B) FEMALES

Age	(A) Males				(B) Females			
	(1) Actual	(2) Expected	(3) Actual—Expected		(4) Actual	(5) Expected	(6) Actual—Expected	
			−	+			−	+
5	874	887	13	-	747	762	15	-
6	864	822	-	42	663	659	-	4
7	727	740	13	-	570	571	1	-
8	677	668	-	9	503	526	23	-
9	669	608	-	61	455	489	34	-
10	529	563	34	-	455	482	27	-
11	490	502	12	-	469	462	-	7
12	510	490	-	20	449	467	18	-
13	507	501	-	6	478	478	-	-
14	550	574	24	-	583	539	-	44
15	620	642	22	-	591	595	4	-
16	759	758	-	1	642	692	50	-
17	812	811	-	1	717	733	16	-
18	856	867	11	-	772	796	24	-
19	933	875	-	58	908	799	-	109
20	923	875	-	48	834	836	2	-
21	972	944	-	28	866	865	-	1
22	885	928	43	-	883	886	3	-
23	916	933	17	-	893	908	15	-
24	912	906	-	6	923	894	-	29
25	845	856	11	-	903	907	4	-
26	854	855	1	-	848	884	36	-
27	826	837	11	-	844	855	11	-
28	873	871	-	2	858	894	36	-
29	772	763	-	9	876	781	-	95
30	870	866	-	4	861	940	79	-
31	757	784	27	-	794	800	6	-
32	852	781	-	71	890	839	-	51
33	697	734	37	-	823	799	-	24
34	740	767	27	-	834	834	-	-
35	890	901	11	-	949	958	9	-
36	921	896	-	25	950	911	-	39
37	954	877	-	77	926	880	-	46
38	992	1,062	70	-	962	1,044	82	-
39	963	972	9	-	927	903	-	24
40	1,116	1,204	88	-	1,000	1,121	121	-
41	933	950	17	-	902	806	-	96
42	1,299	1,269	-	30	1,002	1,058	56	-
43	1,145	1,145	-	-	975	964	-	11
44	1,188	1,088	-	100	1,012	934	-	78
45	1,470	1,407	-	63	1,022	1,144	122	-
46	1,192	1,261	69	-	1,035	990	-	45
47	1,282	1,284	2	-	1,046	1,003	-	43
48	1,512	1,528	16	-	1,178	1,191	13	-
49	1,489	1,480	-	9	1,128	1,064	-	64
50	1,822	1,854	32	-	1,244	1,413	169	-
51	1,500	1,430	-	70	1,029	987	-	42
52	1,817	1,793	-	24	1,299	1,277	-	22
53	1,706	1,665	-	41	1,263	1,170	-	93
54	1,673	1,723	50	-	1,307	1,276	-	31
55	1,808	1,981	173	-	1,312	1,379	67	-
56	1,831	1,873	42	-	1,362	1,346	-	16
57	1,799	1,698	-	101	1,346	1,265	-	81
58	1,907	1,998	91	-	1,450	1,519	69	-
59	1,951	1,852	-	99	1,433	1,354	-	79
60	2,245	2,380	135	-	1,641	1,908	267	-
61	1,833	1,797	-	36	1,420	1,312	-	108
62	2,122	2,150	28	-	1,699	1,623	-	76
63	2,332	2,244	-	88	1,725	1,724	-	1
64	2,325	2,252	-	73	1,937	1,813	-	124
65	2,688	2,845	157	-	2,103	2,254	151	-
66	2,358	2,357	-	1	1,838	1,862	24	-
67	2,543	2,448	-	95	2,076	1,915	-	161
68	2,767	2,770	3	-	2,290	2,284	-	6
69	2,747	2,577	-	170	2,167	2,068	-	99
70	3,118	3,361	243	-	2,511	2,883	372	-

II.—COMPARISON OF ACTUAL DEATHS, CANADA, 1930-32 AND EXPECTED DEATHS BY CANADIAN LIFE TABLE No. 1, (A) MALES, (B) FEMALES—Con

Age	(A) Males				(B) Females			
	(1) Actual	(2) Expected	(3) Actual—Expected		(4) Actual	(5) Expected	(6) Actual—Expected	
			−	+			−	+
71	2,758	2,623	-	135	2,223	2,064	-	159
72	3,211	3,146	-	65	2,646	2,592	-	54
73	3,034	2,893	-	141	2,569	2,441	-	128
74	2,981	2,946	-	35	2,565	2,455	-	110
75	3,003	3,145	142	-	2,665	2,800	135	-
76	2,958	2,950	-	8	2,616	2,572	-	44
77	2,609	2,531	-	78	2,309	2,214	-	95
78	2,653	2,719	66	-	2,473	2,510	37	-
79	2,520	2,303	-	217	2,230	2,072	-	158
80	2,490	2,572	82	-	2,346	2,593	147	-
81	1,993	2,013	20	-	1,977	1,835	-	142
82	2,077	2,096	19	-	1,994	2,007	13	-
83	1,910	1,793	-	117	1,940	1,865	-	75
84	1,730	1,707	-	23	1,852	1,772	-	80
85	1,477	1,485	8	-	1,612	1,627	15	-
Total			1,876	2,287			2,273	2,794
Total of absolute values			4,163				5,067	
Net total			+411				+521	

III.—THIRD DIFFERENCES OF RATES OF MORTALITY (q_x) OF CANADIAN LIFE TABLE No. 1

$10^5\delta^3 q_x$

Age	(A) Males		(B) Females		Age	(A) Males		(B) Females	
	−	+	−	+		−	+	−	+
12	4	-	2	-	52	-	2	-	-
13	4	-	2	-	53	-	2	-	-
14	4	-	2	-	54	-	2	-	-
15	-	1	-	1	55	5	-	4	-
16	-	3	-	2	56	2	-	-	-
17	1	-	1	-	57	-	7	-	6
18	1	-	1	-	58	-	7	-	6
19	1	-	1	-	59	-	7	-	6
20	1	-	-	-	60	3	-	4	-
21	-	1	-	1	61	5	-	4	-
22	-	2	-	-	62	-	4	-	6
23	-	2	-	-	63	-	4	-	6
24	-	2	-	-	64	-	4	-	6
25	1	-	1	-	65	10	-	12	-
26	1	-	-	-	66	3	-	4	-
27	-	2	-	2	67	-	15	-	19
28	-	2	-	2	68	-	15	-	19
29	-	2	-	2	69	-	15	-	19
30	-	1	-	1	70	-	-	-	4
31	1	-	1	-	71	10	-	12	-
32	1	-	1	-	72	-	-	6	-
33	1	-	1	-	73	-	-	6	-
34	1	-	1	-	74	-	-	6	-
35	1	-	1	-	75	5	-	2	-
36	-	1	-	1	76	-	-	-	4
37	-	1	-	2	77	-	7	-	3
38	-	1	-	2	78	-	7	-	3
39	-	1	-	2	79	-	7	-	3
40	2	-	-	-	80	6	-	3	-
41	1	-	1	-	81	5	-	2	-
42	-	3	-	1	82	-	9	-	4
43	-	3	-	1	83	-	9	-	4
44	-	3	-	1	84	-	9	-	4
45	-	-	2	-	85	-	-	-	-
46	2	-	1	-					
47	1	-	-	2	Total	87	163	86	149
48	1	-	-	2					
49	1	-	-	2	Total of absolute values	250		235	
50	2	-	-	-					
51	-	-	2	-	Net total	+76		+63	

COMPARISONS BASED ON THE TABLES

Each of the tables here presented has been calculated for both sexes separately. In addition to making possible a comparison of rates of mortality between the sexes, the tables facilitate three more comparisons: (i) between 1921 and 1931, (ii) among the various regional divisions of Canada, (iii) between Canada's population and that of other countries, particularly England and Wales and the United States. For each of these four types of comparison, the more important figures have been charted.

SEX DIFFERENCES IN MORTALITY

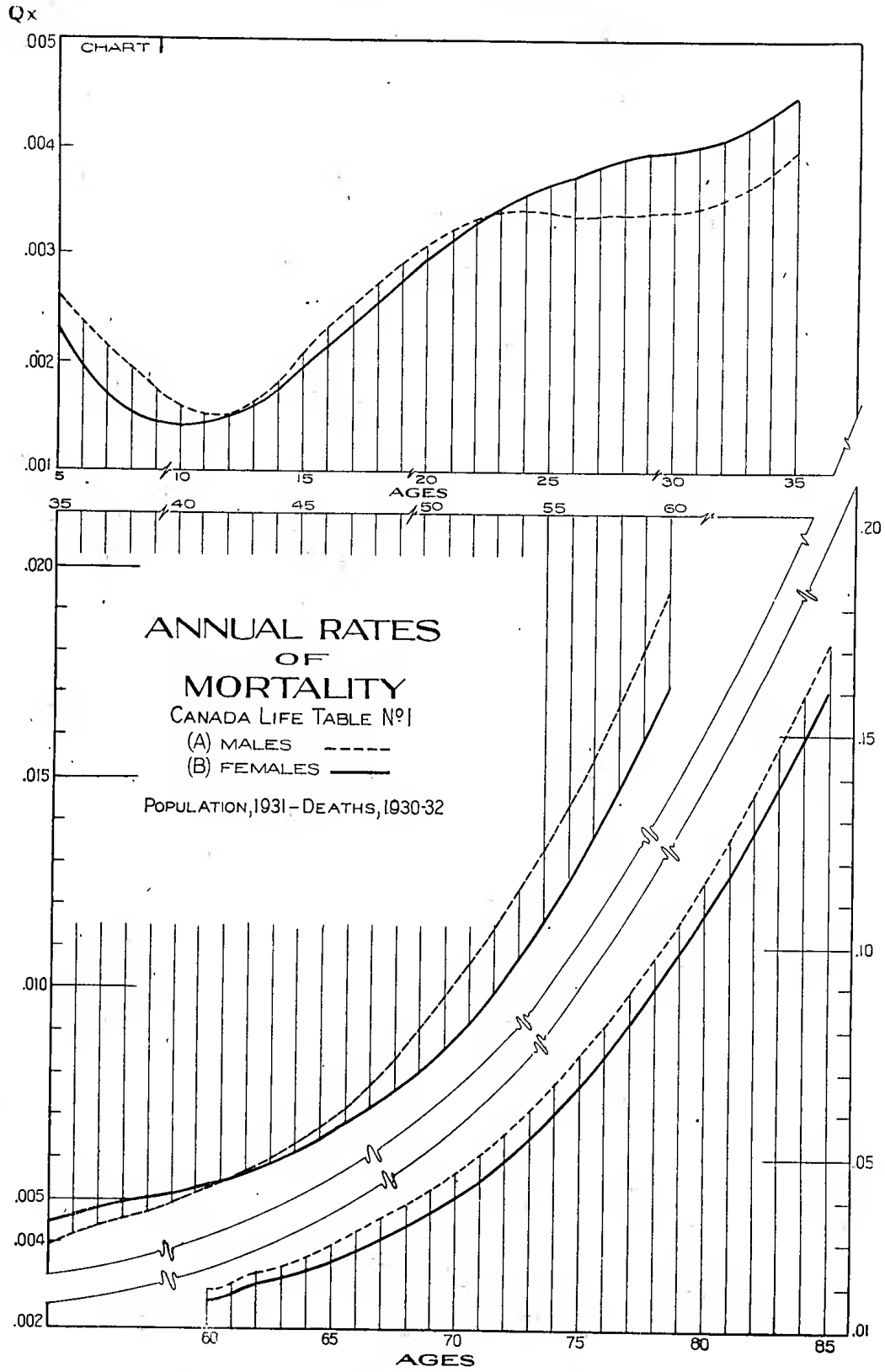
The enormously more favourable mortality of female infants in the period following birth persists through the ages from 5 to about 12 in Canadian Life Table No. 1 (see Chart 1); by this latter age, however, the difference has become very small and remains small until the age of 23, the first age of life at which females show a higher mortality than males. The differential grows to an amount of about ·0005 (*i.e.*, from 10 to 15 p.c.) and remains thus for a few years; at the age of 38 it begins to diminish and reverses in sign between the ages of 42 and 43. From this stage to the end of life female mortality is lower than male by an amount which is increasing on an absolute scale but, towards the higher ages, becoming less when considered as a fraction of total mortality.

The interpretation of the curves follows readily from our knowledge of the main causes of mortality in the two sexes. Important among these, affecting the sexes differently, is the risk of death through childbirth. This in large part accounts for the high female mortality between the ages of 23 and 42. During other periods of life it is reasonable to suppose a higher mortality for the male, menaced as he is by a greater risk of accident as a result of his (usually) more active pursuits both in the earning of a livelihood (occupational diseases, etc.) and in diversion.

The table for the deaths and population of 1931 (Chart 2) for the Registration Area of 1921, which consists of all the provinces of the Dominion except Quebec, shows a similar but not identical relation between the curves for the two sexes. About the age of 21, the female curve, after running since the beginning of life considerably below the male line, comes up very close to it; but instead of crossing at this point, as it does in the Canada table, it remains below but within ·0001 until the age of 31. At this age female mortality becomes greater and so remains until the age of 40 when the curves cross again and continue in the same manner as Canadian Life Table No. 1. The table for the Registration Area is made up on the basis of deaths in 1931 only, while Canadian Life Table No. 1 takes account of the deaths of the three-year period 1930–32, but the comparison which is made on page 842 shows that the deaths for the three-year period for the Registration Area give almost exactly the same rates of mortality as those for the one-year period. Thus the only way of accounting for the different ages at which the excess of female deaths due to maternity risks occurs is by an investigation of the province of Quebec. Here we find that the early superiority of the females in mortality only lasts until age 11; from this point onwards, at first slowly (only reaching a difference of ·00028 by age 20) and then more rapidly, female mortality diverges from male, reaching a maximum excess of ·00144 at age 29. It is not until age 47 that this excess disappears; from that age the probability of dying for males runs far ahead. Statement IV, below, summarizes the facts given above and makes similar observations for the other regional divisions of Canada, as well as for the Registration Area of 1921.

IV.—AGES AT WHICH FEMALE MORTALITY IS HEAVIER THAN MALE

Base	Area	Earliest Age at Which Female Mortality Rises above Male	Greatest Difference between Sexes		2nd Point of Crossing of Male and Female Curves
			Age of Occurrence	Amount	
1930-32 Deaths....	Canada	23	31	·00058	42
	Maritime Provinces	20	28	·00074	47
	Quebec	11	29	·00144	48
	Ontario	32	36	·00013	38
	Prairie Provinces	24	32	·00074	44
	British Columbia	11	12	·00030	15
1921 Deaths.....	Registration Area of 1921	23	36	·00095	44
1931 Deaths.....	Registration Area of 1921	30	36	·00057	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ANNUAL RATES
OF
MORTALITY
CANADA LIFE TABLE Nº 1
(A) MALES
(B) FEMALES
POPULATION, 1931 – DEATHS, 1930-32
60
65
70
75
80
85
AGES

However far back we go in the examination of the general mortality of England and Wales we can find no cases of this higher mortality for females than for males between the ages of 25 and 40 which practically all the tables we have constructed for Canada show. But the detailed English tables throw considerable light on the reasons for this differential. We note from the excerpts from those tables which are published in Statement V below that in 1931 Greater London conspicuously fails to show this differential—much more conspicuously than the whole of England, where the difference between females and males decreases quite definitely during the age period under discussion. Comparing the two counties exhibiting the highest and lowest death rates respectively: in the Northumberland and Durham County Boroughs, where there has been continual blight and economic depression since the War, the general rates are exceedingly high (nearly twice as high as those for Canada) and there is an excess throughout of male over female mortality; on the other hand in the East Region rural districts (whose rates are the lowest in England and come very near to those of Canada) the differential between male and female mortality is greatly in favour of males from the ages of about 25 to 40. The conclusion is inescapable. The relatively prosperous rural district of the East Region shows a distinct parallelism to Canada in this important differentiation of mortality between the sexes. For the year 1911 the English Life Tables included a table of rural as against urban mortality for each sex. There we find for both the rural and urban populations an excess of male mortality at almost all ages. In the case of the rural population, however, the differential is very much less than it is in the case of the urban, as the figures quoted below show. Since the census-defined "rural population" for England is only very roughly rural (very little of it being rural in the Canadian sense) we could hardly expect more than this general tendency to appear.

In the 1921 England and Wales table for the Central Counties, urban, as against the table for the Central Counties, rural, we can see that the female excess exists for the rural population from under age 15 to over age 30.

V.—COMPARISONS OF MALE AND FEMALE MORTALITY FOR VARIOUS DIVISIONS OF ENGLAND AND WALES

$10^5 q_x$

Age	1931											
	English Life Table No. 10			Greater London			Northumberland and Durham			East Region Rural Districts		
	(1) Males	(2) Females	(3) Col.(2)−Col. (1)	(4) Males	(5) Females	(6) Col.(5)−Col. (4)	(7) Males	(8) Females	(9) Col.(8)−Col. (7)	(10) Males	(11) Females	(12) Col.(11)−Col.(10)
10	146	134	− 12	130	122	− 8	206	210	4	124	97	− 27
15	197	191	− 6	188	164	− 24	275	299	23	155	186	31
20	316	268	− 48	288	235	− 53	457	383	− 74	283	255	− 28
25	330	298	− 32	301	260	− 41	476	414	− 62	290	296	6
30	340	319	− 21	324	281	− 43	480	415	− 65	270	329	59
35	421	364	− 57	394	314	− 80	560	454	−106	310	340	30
40	562	440	−122	531	395	−136	755	572	−184	395	397	2
45	799	584	−215	791	535	−256	1020	709	−311	545	521	− 24
50	1128	816	−312	1158	762	−396	1360	932	−428	718	757	39
55	1614	1174	−440	1689	1109	−580	1763	1303	−460	1042	1005	− 37

Age	1921						1911					
	Central Counties Urban			Central Counties Rural			Urban Districts			Rural Districts		
	(1) Males	(2) Females	(3) Col.(2)−Col. (1)	(4) Males	(5) Females	(6) Col.(5)−Col. (4)	(7) Males	(8) Females	(9) Col.(8)−Col. (7)	(10) Males	(11) Females	(12) Col.(11)−Col.(10)
10	159	154	− 5	151	146	− 5	–	–	–	–	–	–
15	195	217	22	176	210	34	259	241	− 18	216	233	17
20	314	288	− 36	285	308	23	340	287	− 53	311	308	− 3
25	382	345	− 37	348	360	12	385	328	− 57	372	355	− 17
30	404	368	− 35	351	360	9	441	388	− 53	428	416	− 12
35	486	421	− 65	407	405	− 2	563	487	− 76	497	484	− 13
40	590	462	−128	514	475	− 39	724	607	−117	618	551	− 67
45	755	608	−148	627	568	− 59	979	809	−170	787	659	−128
50	1,032	840	−192	847	756	− 91	1,404	1,087	−317	1,048	894	−154
55	1,576	1,178	−398	1,237	1,043	−194	2,004	1,541	−453	1,500	1,313	−187

Investigating this phenomenon in the United States we consider the tables below of rural and urban, foreign and native born, White and Negro, male and female mortality; we find that the female excess tends to exist in the rural rather than in the urban, and in the foreign- rather than in the native-born populations. As between races it seems somewhat indefinite. Thus to gather up the available information—we have seen that the phenomenon seems to be characteristic of rural rather than urban, prosperous rather than depressed populations; of populations low, rather than high, in general mortality. This information we have gathered entirely from the figures of other countries. Canada, with her considerably rural, fairly prosperous, healthy, recently-arrived population, therefore, could be expected to show the female excess mortality to a very great degree and, in point of fact, does so. It is hard to show from the different incidences of the excess on the different zones of Canada that these are the attendant circumstances, because of the spread of the different types throughout the country; the fact is that each of the regional divisions is so heterogeneous that relatively delicate comparisons of this nature are not feasible.

VI.—COMPARISONS OF MALE AND FEMALE MORTALITY OF THE WHITE AND COLOURED POPULATIONS OF THE UNITED STATES, 1930

$10^5 q_x$

Age	Continental United States					
	White			Negro		
	(1) Males	(2) Females	(3) Col. (2)− Col. (1)	(4) Males	(5) Females	(6) Col. (5)− Col. (4)
10	147	113	− 34	211	161	− 50
15	213	164	− 49	433	512	79
20	318	277	− 41	858	882	24
25	371	339	− 32	1,096	1,034	− 62
30	413	374	− 39	1,275	1,159	−116
35	510	433	− 77	1,484	1,322	−162
40	679	532	−147	1,813	1,625	−188
45	929	702	−227	2,240	2,018	−222
50	1,278	959	−319	2,750	2,665	− 85
55	1,819	1,375	−444	3,392	3,499	107

VII.—COMPARISONS OF MALE AND FEMALE MORTALITY OF THE NATIVE AND FOREIGN-BORN WHITE POPULATION OF THE ORIGINAL REGISTRATION AREA OF THE UNITED STATES, 1910

Age	Urban			Rural		
	(1) Males	(2) Females	(3) Col. (2)− Col. (1)	(4) Males	(5) Females	(6) Col. (5)− Col. (4)
10	259	223	− 36	207	180	− 27
15	293	270	− 23	269	257	− 12
20	493	410	− 83	483	441	− 42
25	573	522	− 51	513	522	9
30	722	633	− 89	539	546	7
35	973	767	−206	630	611	− 19
40	1210	883	−327	706	665	− 41
45	1518	1120	−398	867	782	− 85
50	1917	1444	−473	1065	991	− 74
55	2693	2098	−595	1537	1408	−129
	Native			Foreign born		
10	237	206	− 31	247	209	− 38
15	282	264	− 18	289	267	− 22
20	482	440	− 42	510	365	−145
25	583	543	− 40	506	479	− 27
30	714	613	−101	580	584	4
35	878	700	−178	810	739	− 71
40	1002	776	−226	1053	855	−198
45	1168	933	−235	1401	1090	−311
50	1417	1168	−249	1792	1442	−350
55	1947	1620	−327	2540	2144	−396

SECULAR TREND IN MORTALITY

It is unfortunate that we in Canada can not, like the English, make comparisons on the basis of an unbroken line of life tables extending back to 1841. The only time comparison that we can make is with 1921 and the decade 1921–31.

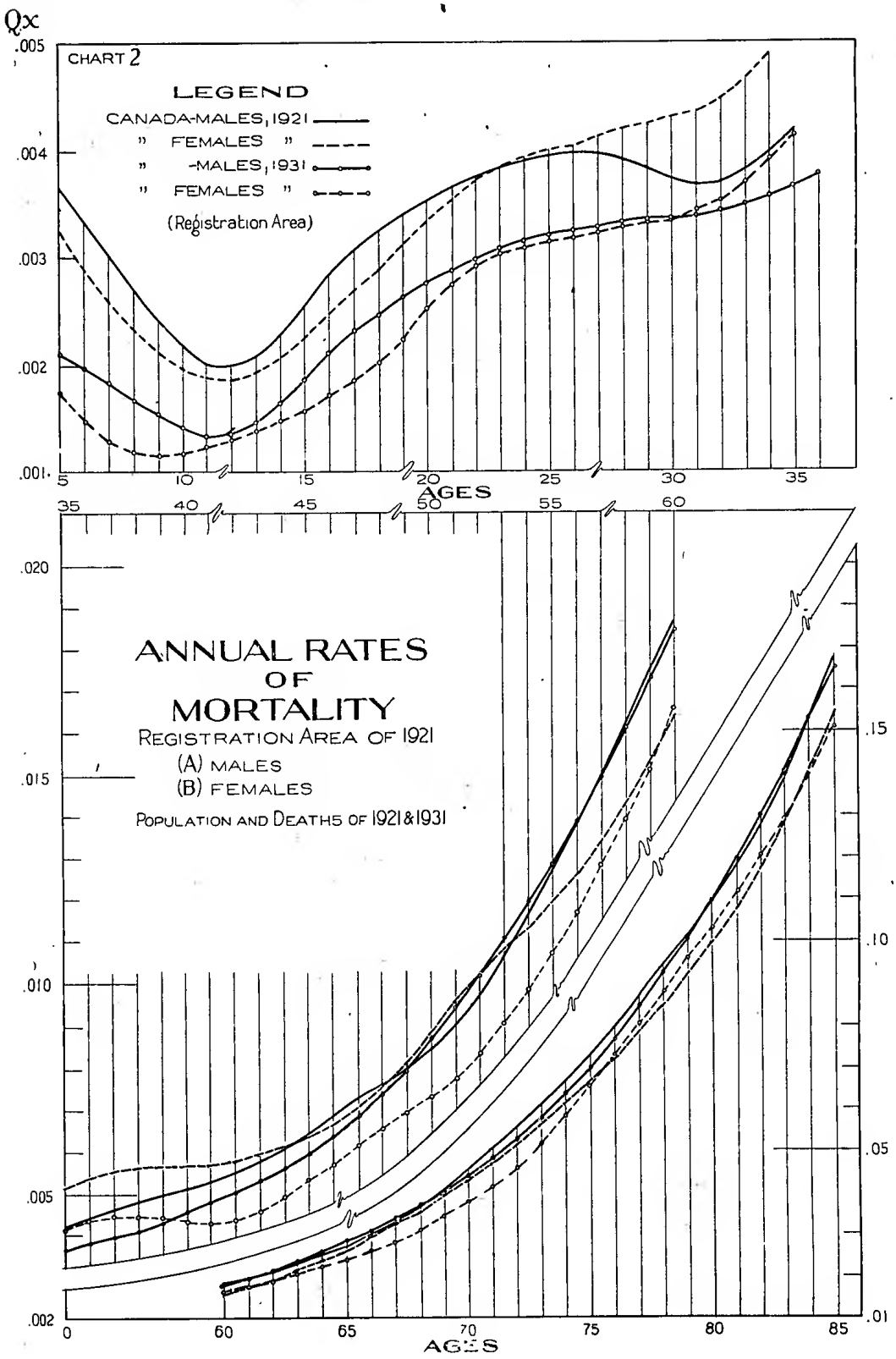
There has been in the Registration Area of Canada, as in other countries, an almost continuous improvement not only in the crude rates of mortality which dropped from 10·6 in 1921 to 9·4 in 1931, but also in the standardized rates. The naive observer might expect that this falling death rate extends to the whole period of life; he reasons that the improvements in sanitation and medical science that have come with increasing wealth and civilization and with the pushing back of the frontier would extend to all ages equally. This is not the case. If we consider the rates among males in the Registration Area for 1921 and 1931 we can see (Chart 2) that there is a difference between 1921 and 1931 of ·00157 at the youngest age of the table, age 5, and that this difference decreases for a few years and then remains nearly constant until the age of 27 where it is ·00070. Here the difference takes a sudden dip down to ·00029 at age 32, rises again slightly and finally disappears, for most practical purposes, from age 50 to the end of life. Hence, aside from the infantile ages (0–5) which will form the subject of a separate investigation, the greatest improvements are to be observed in the twenty-year period from 5 to 25. It is in this range that the influences of civilization and the achievements of medical science have had the most noticeable effect.

The case for the female population and deaths of 1921 against those of 1931 is analogous but with one important element of difference. Here the original difference of ·00152 at age 5 decreases to a minimum at age 12 of ·00059 and then begins to increase gently, being of the amount of ·00094 at age 30. It comes slowly to a maximum of ·00128 at 42. It continues great until the age of about 55 when it begins to disappear, and from age 60 onwards there is little to choose between the two life tables. It is to be noted that the gap between female mortality from ages 30 to 45 of 1921 and 1931 is very much greater than between male mortality in the two years in the same age intervals. In the comparison for females we can detect the same influences we noted in the male table, with the addition, perhaps due to more easily available medical care in child bearing, of a greater improvement in the rates of mortality for females between 30 and 45 than is to be found in any other sex-age group outside of the ages 0–10.

The single-census method of constructing a mortality table from census data and death records has for some decades been considered superior to the two-census method. Chief fault of the two-census procedure, particularly when, as in Canada, the population is rapidly changing not only in total numbers but in age constitution, is the difficulty of obtaining the mean of the exposed. The most practicable method is the very simple one of using the average of the figures for the terminal points (that is the average of the two censuses).

Using, therefore, the 1921 and 1931 Censuses, and the deaths recorded for the Registration Area for the interval 1922–30 and half the deaths of the years 1921 and 1931, we obtain the pivotal rates of mortality for the two sexes shown in Statement VIII. The pivotal values from the deaths and populations of 1921 and 1931 are also given for comparison.

At every age up to 57 for both males and females 1921 is greater than 1921–31, which in turn is greater than 1931. In short, mortality at the ages below 57 was improving more or less continuously during the decade. For the ages of 57 and upwards, on the other hand, there seems to be in general a higher mortality for the ten-year period than for either of the two one-year periods. Between the one-year periods at these higher ages there is little choice in mortality, now one, now the other, being higher. In so far as the short period of ten years can give an indication this agrees well with the trend of English and American mortality.


Qx
CHART 2
LEGEND
CANADA-MALES, 1921
" FEMALES "
" -MALES, 1931
" FEMALES "
(Registration Area)
.005
.004
.003
.002
.001
5
10
15
20
25
30
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AGES
35
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45
50
55
60
.020
.015
.010
.005
.002
ANNUAL RATES
OF
MORTALITY
REGISTRATION AREA OF 1921
(A) MALES
(B) FEMALES
POPULATION AND DEATHS OF 1921 & 1931
.15
.10
.05
.01
0
60
65
70
75
80
85
AGES

VIII.—ANNUAL RATES OF MORTALITY FOR MALES AND FEMALES FOR THE REGISTRATION AREA OF 1921, BASED ON DEATHS OF 1921, 1921-31 AND 1931

^{a} $10^{5}q_{x}$

Age	Males			Females		
	1921	1921-31	1931	1921	1921-31	1931
7	304	234	183	202	198	127
12	200	186	134	188	165	129
17	308	270	231	268	240	186
22	376	334	299	372	336	291
27	398	343	328	414	370	324
32	371	347	343	450	410	353
37	463	437	392	554	495	447
42	554	550	508	583	552	434
47	726	714	682	708	702	616
52	972	970	1,020	1,017	914	833
57	1,509	1,520	1,495[1]	1,341	1,356	1,279[1]
02	2,163	2,256	2,170[1]	1,947	2,010	1,947[1]
07	3,286	3,649	3,412[1]	3,278	3,204	2,860
72	5,582	5,522	5,256	5,177	4,888	4,628
77	8,677	8,920	8,378[1]	7,838	8,119	8,004[1]
82	12,773	13,519	13,025[1]	11,705	12,607	12,027
87	19,408	19,861	19,147[1]	18,252	18,773	17,332[1]
92	24,740	28,950	27,078[1]	25,697	25,243	23,554[1]

[1] Cases where 1921-31 does not fall between 1921 and 1931.

The observation that the secular trend in mortality is downwards only for the early ages of life, being doubtful or non-existent at older ages, has been made many times in other countries. Canada seems to follow this rule, in so far as the available information will permit us to judge. This means that we can look forward to a tendency for fewer and fewer deaths to take place in the ages 0–50, say, and an increasing proportion to take place from 50 to 80. So far, human effort has made little attack on the Biblically-assigned upper limit of life.

Mortality rates in England and Wales go back to the year 1838 and are given by age in the 1935 edition of the Registrar General's Review. An examination of the data (Statement IX below) shows that while the rate of mortality at the younger ages has decreased to about one-third of the rate of ninety years before, yet at the oldest age bracket the decrease is a mere 9 p.c. Statement X tells a similar story for the shorter record of the United States.

IX.—DEATHS PER 1,000 MALE AND FEMALE POPULATION AND IMPROVEMENT IN RATE OVER NINETY-YEAR PERIOD, ENGLAND AND WALES

Age Group	Males						Females					
	1841-45	1886-90	1931-35	1886-90 ÷ 1841-45	1931-35 ÷ 1841-45	Improvement 1843-1933	1841-45	1886-90	1931-35	1886-90 ÷ 1841-45	1931-35 ÷ 1841-45	Improvement 1843-1933
All ages	21·6	20·0	10·7	92·59	49·54	10·9	19·8	17·2	·8·6	86·87	43·43	11·2
0- 4	68·7	61·9	20·1	90·10	29·26	48·6	58·6	52·0	16·0	88·74	27·30	42·6
5- 9	8·8	4·9	2·3	55·68	26·14	0·5	8·6	4·9	2·1	56·98	24·42	6·5
10-14	4·8	2·8	1·4	58·33	29·17	3·4	5·2	2·9	1·4	55·77	26·92	3·8
15-19	6·8	4·1	2·4	60·29	35·29	4·4	7·7	4·2	2·2	54·55	28·57	5·5
20-24	9·0	5·5	3·2	61·11	35·56	5·8	8·6	5·2	2·8	60·47	32·56	5·8
25-34	9·4	7·4	3·3	78·72	35·11	6·1	9·9	6·9	3·1	69·70	31·31	6·8
35-44	12·2	12·1	5·4	99·18	44·26	6·8	12·1	10·3	4·3	85·12	35·54	7·8
45-54	17·2	19·4	11·2	112·79	65·12	6·0	15·1	15·0	7·9	99·34	52·32	7·2
55-04	30·3	35·2	23·5	116·17	77·56	6·8	27·2	28·8	16·9	105·88	62·13	10·3
65-74	65·5	72·1	56·8	110·08	86·72	8·7	59·1	61·7	43·0	104·40	72·70	16·1
75-84	143·7	147·9	135·2	102·92	94·08	8·5	131·8	132·3	109·7	100·38	83·23	22·1
85 and over	305·1	313·7	278·8	102·82	91·38	26·3	288·6	276·1	247·6	95·07	85·79	41·0

X.—DEATHS PER 1,000 MALE AND FEMALE POPULATION AND IMPROVEMENT IN RATE OVER THIRTY-YEAR PERIOD, FOR THE ORIGINAL REGISTRATION AREA OF THE UNITED STATES

Age	Males			Females		
	1900-02	1929-31	Improvement 1901-30	1900-02	1929-31	Improvement 1901-30
7	4·20	2·08	2·12	3·91	1·69	2·22
12	2·59	1·58	1·01	2·43	1·19	1·24
17	4·25	2·55	1·70	4·27	2·01	2·26
22	6·68	3·28	3·40	6·19	3·09	3·10
27	7·35	3·47	3·88	7·15	3·22	3·93
32	8·48	4·21	4·27	8·05	3·81	4·24
37	9·85	5·63	4·22	8·68	4·50	4·18
42	11·24	8·04	3·20	9·76	0·03	3·73
47	13·72	11·21	2·51	11·56	8·47	3·09
52	17·06	16·14	0·92	15·03	12·07	2·90
57	24·20	23·25	0·95	21·31	17·74	3·57
62	32·76	33·68	−0·92	28·65	27·07	1·58
67	48·21	48·28	−0·07	42·52	40·46	2·00
72	68·01	71·00	−2·39	63·04	61·35	1·69
77	104·41	105·26	−0·85	94·87	94·14	0·73
82	155·42	154·87	0·55	141·16	140·78	0·38
87	218·59	213·95	4·64	209·20	197·90	2·30

The absolute figures have been given above since the comparison is intended to be made between the three countries at a given age, *i.e.*, horizontally on the tables presented. For a vertical comparison it would be necessary to reduce the amounts of difference given to ratios of the actual mortality at the various ages since it is age-by-age percentage improvement that is significant. The figures for the Registration Area of 1921 on this basis are shown below.

XI.—PERCENTAGE DECREASE OF MORTALITY OF THE MALE AND FEMALE POPULATION, FROM 1921 TO 1931 AT QUINQUENNIAL AGES, REGISTRATION AREA OF 1921

Age	Males	Females	Age	Males	Females
5	42·78	46·77	55	− 0·94	9·82
10	36·07	41·21	60	0·64	− 0·73
15	27·24	30·84	65	− 4·21	9·29
20	22·03	24·55	70	3·36	13·28
25	18·99	21·45	75	5·06	1·19
30	10·40	21·81	80	− 0·76	− 4·16
35	12·86	19·46	85	1·37	·23
40	11·33	24·30	90	− 4·10	7·05
45	7·72	17·03	95	−17·44	7·41
50	− 2·12	17·55			

The chance of a male born alive living to age 70 by English Life Table No. 10 (1930–32) is as good as his chance of reaching age 55 by English Life Table No. 4 (1871–80). The chance of reaching age 55 by English Life Table No. 10 is as good as the chance of reaching age 13 by English Life Table No. 4.

Below are the actual amounts of improvement, expressed as the difference in the probabilities of dying in a year between 1921 and 1931 for Canada, England and Wales and the United States. It is apparent that the improvements for the single decade spread themselves rather irregularly over the various age groups for the three countries.

XII.—IMPROVEMENTS IN MALE AND FEMALE MORTALITY IN DECADE 1921-31 FOR THREE COUNTRIES, CANADA, ENGLAND AND WALES AND THE UNITED STATES

Age	Males			Females		
	Canada[1] 1921-31	England and Wales 1921-31	United States[2] 1920-30	Canada[1] 1921-31	England and Wales 1921-31	United States[2] 1920-30
10	·00079	·00035	·00064	·00082	·00046	·00067
20	·00078	·00033	·00114	·00082	·00038	·00161
30	·00039	·00094	·00168	·00094	·00073	·00235
40	·00058	·00126	·00065	·00138	·00092	·00148
50	−·00018	·00051	−·00129	·00155	·00099	·00094
60	·00012	·00146	−·00239	−·00012	·00127	·00067
70	·00153	−·00038	−·00386	·00576	·00195	·00106
80	−·00083	−·00498	−·01002	−·00412	−·00092	−·00392

[1] Registration Area of 1921.
[2] Registration Area of 1920.

MORTALITY IN THE REGIONAL DIVISIONS OF CANADA

A very small amount of investigation shows that mortality differentials between the various regional divisions of Canada vary greatly from age to age. The spread for males between the zones decreases from age 5 (see Chart 3) to a minimum that coincides with the minimum in mortality, *i.e.*, at about age 12 or 13. After these ages there is a branching out again, the most striking feature of which is the enormous difference between the Maritimes and the Prairie Provinces. At age 27, where this difference reaches a maximum, the mortality for the Maritime males is ·00429 and for Prairie males is ·00269, the difference being ·00160. This difference persists almost constant in amount until the age of 50 or 55 is reached, at which time the gap begins to close up, and from about 60 onwards the Maritimes and Prairies more or less oscillate about one another, no significant differences being noticeable.

On the basis of the method and results of Mr. M. C. MacLean's work* on the description of population, these facts have a great deal of meaning. The general subject of Mr. MacLean's work is the way in which age structure in any population group is the reflection of the history of that group. And perhaps the most important constituent of the history of a country whose growth has been as rapid as that of Canada is immigration.

An immigrant population is rather healthier than a population that stays at home, for there is a kind of self-selection of immigrants by which only the fittest ever get to Canada, over and above whatever selection is carried out by the Department of Immigration. If this consideration applies to an individual immigrant it applies to any group tending to be dominated by immigrants; in particular it applies to age-sex groups. Mr. MacLean's work on the age structure of the immigrant population† has made it clear that that population is essentially middle-aged in character, and that those counties of Canada that have absorbed large numbers of immigrants tend also to be those that have the highest proportion of their population between the ages of 25 and 64. If the same is true of regional divisions of Canada, then those provinces that have a large immigrant population will have lower mortality considered relatively to provinces of largely native constitution, at the middle ages at which the immigrants predominate, than at the older and younger ages at which there are relatively few immigrants.

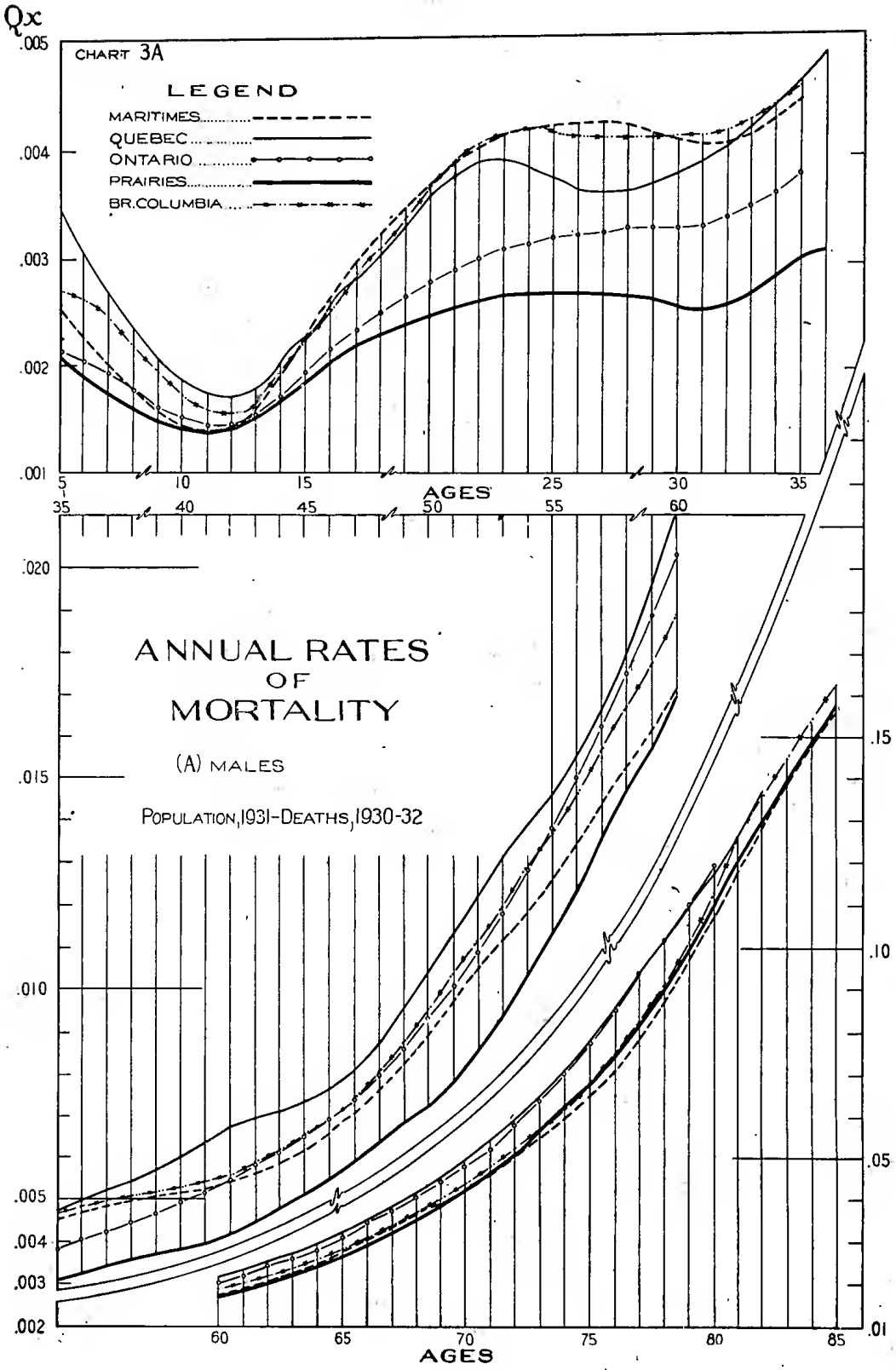
In other words, on the theory that it is the type of population (such type being determined by population structure, racial origin and other features, underlying which are the factors of self-selection of that population through immigration) that largely determines death rates, the divergence between the different regions in respect of mortality should be greatest at the ages where immigration takes place. At the very young ages and at the very old ones, the Maritimes, which are the oldest part of Canada (the word "oldest" being here used in the special sense of oldest in respect of immigration history, a somewhat technical sense developed at length in the monograph on Ages by Mr. M. C. MacLean), will be very similar to the Prairies, the "newest" part of Canada; for in the old population, selection has worn off—to use the life assurance phrase—*i.e.*, the initially healthy group has weakened until the average health of its constituents is no better than that of the population as a whole and the young population is largely native-born, and therefore tends to native mortality. The immigrant population is predominantly in the middle-age groups and it is in these ages that the greatest differences would exist between provinces in mortality. To measure the difference between regions we have calculated the coefficient of variation at different ages. As shown below, these coefficients rise to a maximum at about age 30 for males and then decrease towards the older ages.

XIII.—COEFFICIENT OF VARIATION OF DEATH RATE IN THE FIVE REGIONAL DIVISIONS OF CANADA AT DECENNIAL AGES

Age	Males	Females	Age	Males	Females
10	·1115	·1951	50	·1162	·1170
20	·1582	·2187	60	·0912	·1009
30	·1679	·2102	70	·0621	·0928
40	·1430	·1782	80	·0423	·0913

*See 1931 Census, Vol. I, Chap. I.

†See 1931 Census Monograph *The Age Distribution of the Canadian People* by M. C MacLean.


Qx
CHART 3A
LEGEND
MARITIMES
QUEBEC
ONTARIO
PRAIRIES
BR.COLUMBIA
.005
.004
.003
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.001
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10
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AGES
25
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45
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ANNUAL RATES
OF
MORTALITY
(A) MALES
POPULATION, 1931 - DEATHS, 1930-32
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AGES

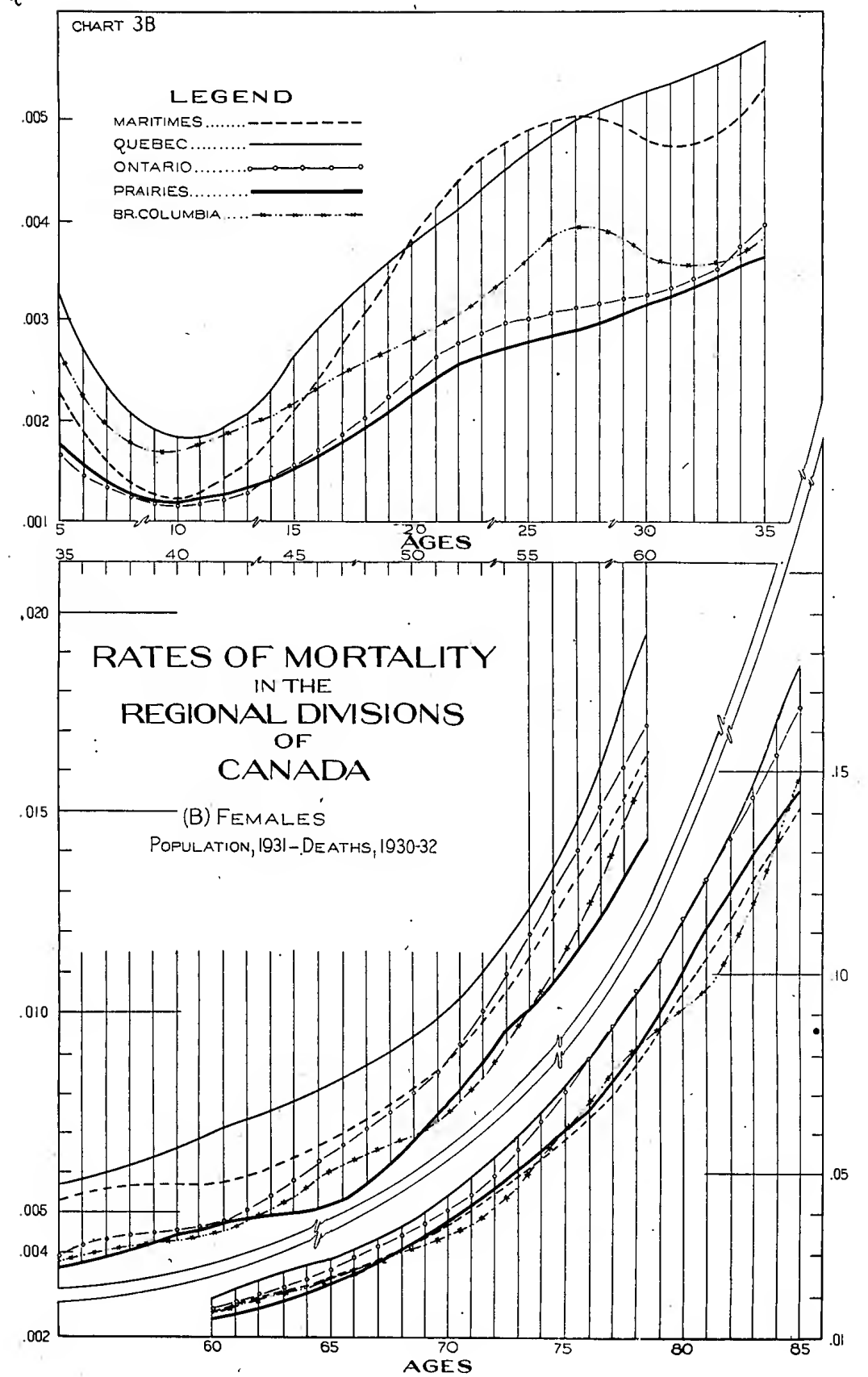
CHART 3B
LEGEND
MARITIMES
QUEBEC
ONTARIO
PRAIRIES
BR. COLUMBIA
.005
.004
.003
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.001
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RATES OF MORTALITY
IN THE
REGIONAL DIVISIONS
OF
CANADA
(B) FEMALES
POPULATION, 1931 — DEATHS, 1930-32
.15
.10
.05
.01
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70
75
80
85
AGES

By a coincidence which can hardly be the result of pure chance the immigrant population is most important about age 30. The statement below shows the percentage in each quinquennial age group who are foreign-born; the non-British-born populations being taken as a sample of the mobile group. This applies, of course, to persons who arrived in Canada at all periods. A steady rise up to the 35–39 groups is observed, after which there is a steady fall until age 90.

XIV.—PERCENTAGE OF TOTAL POPULATION IN EACH AGE GROUP OF NON-BRITISH BIRTH, CANADA, 1931

Age Group	P.C.	Age Group	P.C.
All ages	10·82	55–59	14·27
		60–64	12·42
0–4	1·62	65–69	11·23
5–9	3·61	70–74	10·16
10–14	3·08	75–79	9·24
15–19	4·54	80–84	7·62
20–24	11·09	85–89	7·56
25–29	17·96	90–94	7·10
30–34	20·12	95–99	9·13
35–39	20·64	100 and over	15·34
40–44	19·64	Not stated	11·96
45–49	18·20		
50–54	15·58		

The modal year-group of immigration of the non-British-born population is 1926-30, but a large part of the immigrants arrived before 1920. We can obtain a more refined measure of the age characteristics of the mobile elements by directly finding the percentage of the total population in any age group who entered this country in the five-year period 1926-30. Below are the figures for males and females separately. It will be seen that the proportion of immigrants reaches its peak in the age group 25-29. The number of female immigrants is rather smaller than that of males, but the same conclusion is indicated.

XV.—IMMIGRANTS ARRIVING IN 1926-30 AS PERCENTAGE OF POPULATION IN QUINQUENNIAL AGE GROUPS, BY SEX, CANADA, 1931

Age Group	Males			Females		
	Total	Immigrants 1926-30	Immigrants 1926-30 as Percentage of 1931 Population	Total	Immigrants 1926-30	Immigrants 1926-30 as Percentage of 1931 Population
0– 4	543,172	10,571	1·95	531,243	10,171	1·91
5– 9	572,507	23,274	4·07	560,242	21,996	3·93
10–14	542,930	14,300	2·63	531,121	13,023	2·45
15–19	525,250	20,514	3·91	514,341	14,587	2·84
20–24	463,722	39,275	8·47	447,463	30,425	6·80
25–29	409,976	59,348	14·48	376,305	31,868	8·47
30–34	368,135	45,347	12·32	340,701	23,347	6·85
35–39	359,081	25,283	7·07	329,382	14,994	4·55
40–44	347,763	14,558	4·19	298,336	9,167	3·07
45–49	321,513	8,973	2·79	263,698	6,067	2·30
50–54	267,332	4,946	1·85	221,349	4,152	1·88
55–59	199,160	2,645	1·33	167,865	2,506	1·49
60–64	156,912	1,551	0·99	137,685	1,672	1·21
65–69	120,695	948	0·79	110,439	1,154	1·04
70–74	88,581	553	0·62	83,019	648	0·78
75–79	50,017	237	0·47	48,612	288	0·59
80–84	23,877	98	0·41	25,294	118	0·47
85–89	8,665	36	0·42	10,464	50	0·48
90–94	2,051	3	0·15	2,881	5	0·17
95–99	417	1	0·24	656	3	0·46

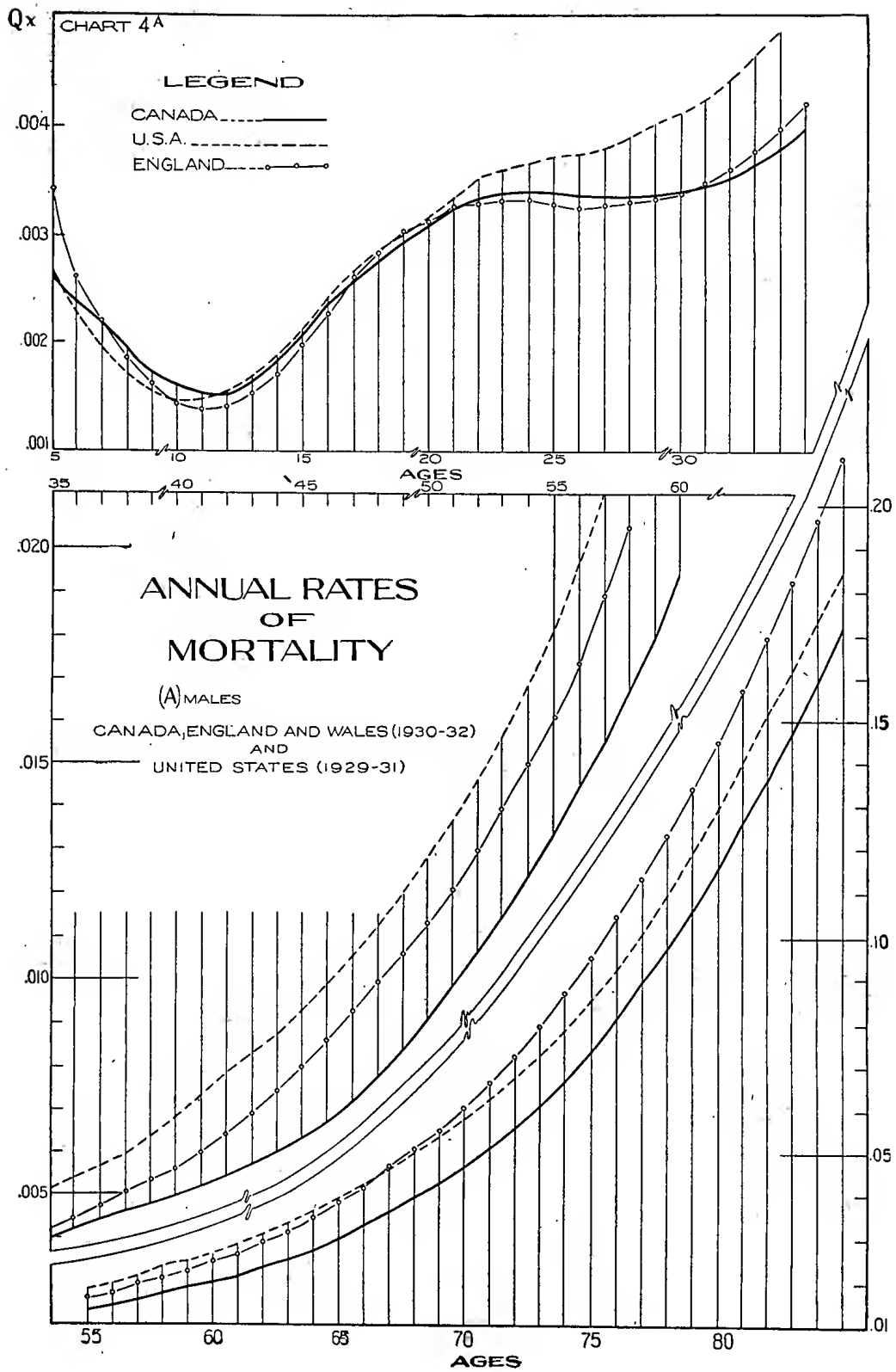
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CHART 4A
LEGEND
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ANNUAL RATES
OF
MORTALITY
(A) MALES
CANADA, ENGLAND AND WALES (1930-32)
AND
UNITED STATES (1929-31)
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AGES

MORTALITY OF OTHER COUNTRIES

Comparing the probabilities of dying for males of Canada, England and the United States, we see (in Chart 4) that except at 8, 9, 10 and 11 there is no point between ages 5 and 90 where Canada is not below at least one of the other two countries; between 17 and 21 and from 31 through to 90 she is below both of them.

The charts bring out the fact that the relative spread between the three curves is greatest about the middle and older ages of life, being very small at the young ages; also that the differences are less for females than for males.

The superiority of Canada's mortality appears likewise in a comparison of figures about the year 1921. From the statement below (Statement XVI) we can see that there are few ages at which Canada is not superior to England and Wales and to the United States.

But Canada's continued lighter mortality is, in all likelihood, due only in part to healthier climate and manner of living, superior medical and sanitation facilities. It is due much more to the selection of the personnel of the population through immigration, which was spoken of previously as a principal cause of the differences between Canada's regional divisions. The United States is "older" than Canada so the selection of its population through immigration has worn off to some extent—hence its higher mortality.

XVI.—COMPARISON OF MALE AND FEMALE LIFE TABLES FOR THE REGISTRATION AREA OF CANADA, 1921 WITH OFFICIAL TABLES OF ENGLAND, 1921 AND THE UNITED STATES, 1920

Age	Males			Females		
	Canadian Life Table 1921[1]	English Life Table No. 9[2]	United States Life Table 1920[3]	Canadian Life Table 1921[1]	English Life Table No. 9[2]	United States Life Table 1920[3]
5	·00367	·00417	·00395	·00325	·00424	·00349
10	·00219	·00181	·00211	·00199	·00180	·00179
15	·00257	·00218	·00291	·00227	·00227	·00249
20	·00354	·00349	·00427	·00334	·00306	·00433
25	·00395	·00398	·00504	·00401	·00350	·00552
30	·00375	·00434	·00573	·00431	·00392	·00603
35	·00420	·00553	·00669	·00514	·00451	·00642
40	·00512	·00688	·00750	·00568	·00532	·00676
45	·00648	·00881	·00926	·00640	·00668	·00814
50	·00849	·01179	·01174	·00883	·00915	·01067
55	·01272	·01755	·01653	·01191	·01319	·01463
60	·01862	·02561	·02462	·01639	·01897	·02173
65	·02730	·03975	·03499	·02670	·02992	·03168
70	·04550	·05997	·05463	·04336	·04646	·05023
75	·07329	·09379	·08191	·06651	·07594	·07597
80	·10121	·14002	·11973	·09908	·11766	·11341
85	·16726	·19974	·18232	·15440	·17465	·17044
90	·22800	·26752	·23819	·22626	·23852	·23061

[1] Based on deaths of 1921 only for the Registration Area.
[2] Based on population of England and Wales, 1921 and deaths of 1920-22.
[3] Based on White population of the Registration Area, 1920 and deaths of 1919-21.

The case for England and Wales as compared with Canada is less clear; perhaps some climatic or other reason has been responsible for the closeness of its mortality to that of Canada at the ages 20–35. Above the latter age the curve for Canada falls considerably below that of the Old Country.

MORTALITY BY OTHER THAN REGIONAL DIVISIONS OF CANADA

No tabulations are made in Canada of deaths by birthplace and age of decedent, or by racial origin and age, or by year of immigration and age, and hence it is impossible for us to test out explicitly the conclusions which have been drawn on the basis of differences in the death rates of the regional divisions of Canada. But there is an indirect way in which we can tell whether one section (other than regional) of the population is subject to greater mortality than another without knowing the age distribution of its dying members. The census gives, in five-year age groups, the numbers of persons of the various racial origins and birthplaces by sex and the vital statistics gives numbers of deaths by sex and birthplace and sex and racial origin, both without regard to age. Hence the procedure for comparing death rates in such a

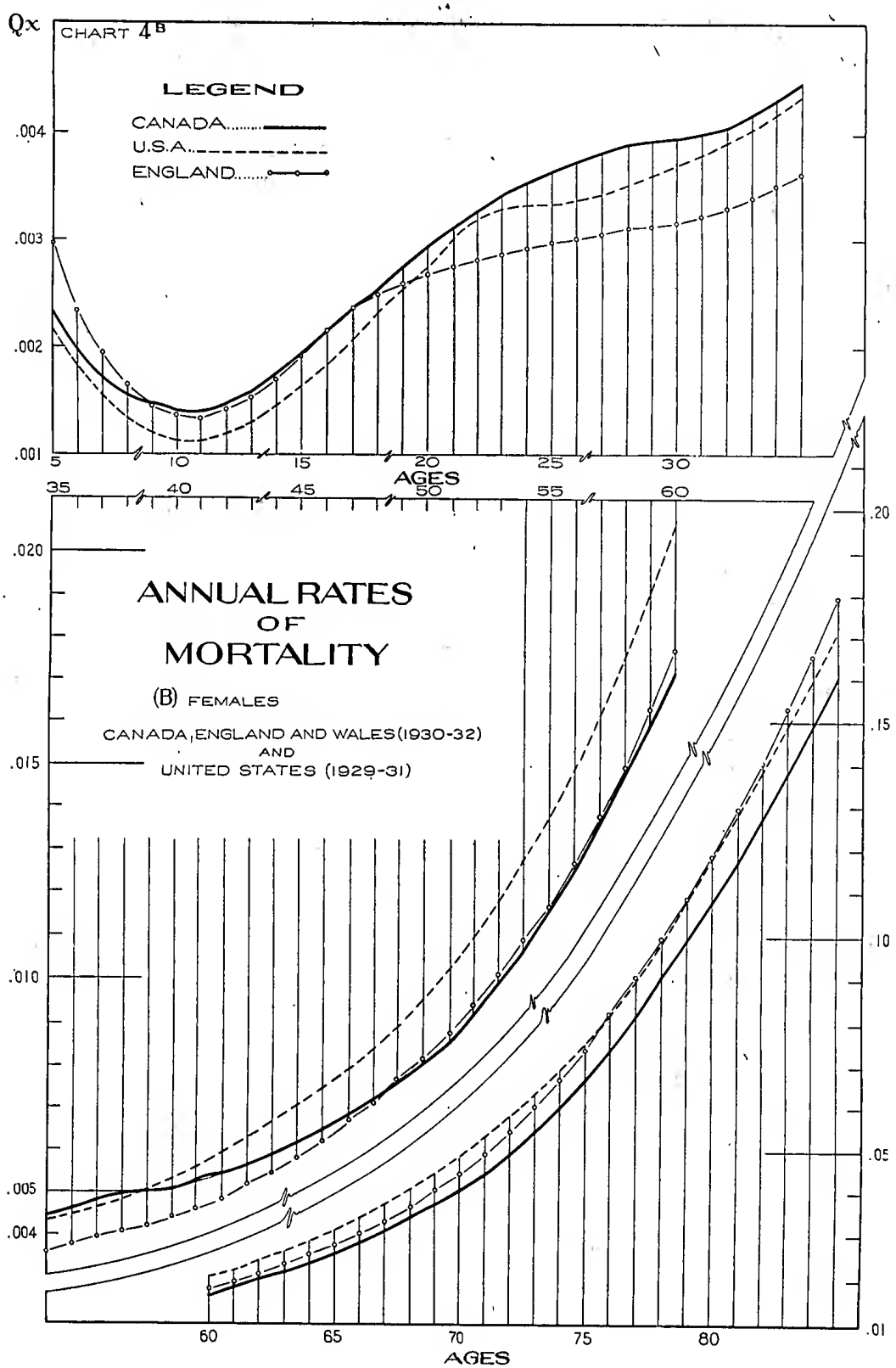
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CHART 4B
LEGEND
CANADA
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ANNUAL RATES
OF
MORTALITY
(B) FEMALES
CANADA, ENGLAND AND WALES (1930-32)
AND
UNITED STATES (1929-31)
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AGES

way that we will make the (absolutely essential) allowance for age distribution in the living population, without having to calculate age-specific death rates, is to multiply the numbers given as living in a sex-age-race, say, distribution by the age-specific death rates which are obtainable for the given sex for Canada from the Census of 1931 and vital statistics for 1930–32. By adding up the expected deaths for all ages for the given section of the population we can obtain the total expected deaths on the assumption that the age-specific rates are the same as those for the whole of Canada for the sex investigated. Then we may compare this figure with the number of deaths for the aggregate (of all ages) for the particular birthplace or racial origin classification given in the vital statistics for the three-year period, and the excess or defect of this amount from the calculated will give a measure of the comparative mortality of the group in question and the general population of Canada, due regard thus having been paid to the differences in age distribution which so greatly affect liability to mortality.

Thus we can see what constituents of the population of Canada have the greatest mortality; what are the constituents of our population that have brought us to the point where we are superior to England and the United States, and what are the forces that prevent us from being quite as healthy as, say, the Scandinavian Countries. As long as the total mortality for the groups is given we can carry our investigations into any classifications whatever, without requiring deaths in that classification by age.

We have seen that the regional divisions of Canada differ greatly from one another in mortality. The reasons for this, or for the differences between provinces, can be investigated in the same manner. Do the Swedes in Saskatchewan, for example, help to keep its death rate low? To find out, all we need to do is to calculate the expected mortality of the various racial origins in Saskatchewan on the basis of the total Prairie mortality at each age and compare the totals taken for all ages for each racial origin with actual total deaths in that racial origin as given in the vital statistics.

Below are given expected deaths for certain birthplace groups, calculated on the basis of deaths in five-year age groups for males in Canada for the years 1930-32, the exposures being the population in each five-year age group of the given birthplace classification as reported in the Census of 1931. The "actual" deaths are taken from the volumes of vital statistics for 1930, 1931 and 1932.

XVII.—ACTUAL AND EXPECTED MALE DEATHS, BY BIRTHPLACE[1], CANADA, 1930-32

Birthplace	Actual	Expected	Actual ÷ Expected
Total	171,791	171,791	
Canada	131,782	131,077	1·0054
British Isles	21,039	21,725	0·9684
British Possessions	819	749	1·0935
Europe	11,941	11,901	1·0034
Asia	1,198	1,345	0·8907
United States	5,012	4,994	1·0036

[1] Not stated birthplaces distributed.

The classification "Not stated" birthplace in the actual deaths was considerable (1,228 for the three years), so great, in fact, that if it contained any considerable deviation from the proportional distribution assumed, much of the comparison would be invalidated. "Other" birthplace deaths were few in number and were distributed with the "Not stated", as were deaths of residents of the Yukon and the Northwest Territories.

Notwithstanding these limitations of the table it is plain that the Canadian born in Canada are subject to higher mortality than Canadian residents as a whole and that immigrants from the British Isles and Asia are subject to lower. For the other cases, either the numbers involved are very small or the differences are negligible.

It is particularly remarkable that the British Isles should show higher mortality for males than Canada as a whole while British immigrants in Canada show lower. There could be no more convincing evidence of the action of immigrational selection.

If we take as the mobile population of a province that part which was not born in the province, we may calculate, in the same way, actual and expected mortality for the non-mobile and total populations in each case. Below are the figures for males for the five provinces whose mobile male population was 25 p.c. or more of all males at the 1931 Census. It is to be noticed that the three provinces of most recent settlement show a considerably higher actual than expected mortality for those males.

XVIII.—ACTUAL AND EXPECTED MORTALITY IN THE SEVERAL PROVINCES OF MALES LIVING IN THE PROVINCE IN WHICH THEY WERE BORN, 1931

Province	P.C. of Males Born in Province	Actual	Expected	Actual ÷ Expected
Ontario	70·6	39,638	40.876	0·9697
Manitoba	51·3	3,140	3.208	0·9788
Saskatchewan	44·9	4,080	3,977	1·0259
Alberta	38·0	3,245	3,063	1·0594
British Columbia	30·7	2,370	2,248	1·0543

MOST PROBABLE LIFETIME

The number of persons dying in each year of age in the stationary population of the life table rises to a maximum, generally in the age interval 75–80, and then decreases, reaching 0 at the end of the table. For Canada and its regional divisions the maximum points occur as follows:—

XIX.—AGE AT WHICH MAXIMUM NUMBER OF DEATHS OCCURRED IN STATIONARY POPULATION AND NUMBER OF DEATHS AT THAT AGE, FOR MALES AND FEMALES, CANADA AND REGIONAL DIVISIONS, 1930-32

Regional Division	Males		Females	
	Age	Deaths	Age	Deaths
CANADA	77	3,112	78	3,196
Maritime Provinces	80	3,043	80	2,995
Quebec	76	2,991	78	2,941
Ontario	77	3,173	78	3,386
Prairie Provinces	79	3,297	80	3,382
British Columbia	79	3,046	77	3,221

In general the better the mortality at older ages, the older will be the age at which the maximum number of deaths take place. The series of English life tables work their way from age 71 (English Life Table No. 1 (1841)) to age 74 (English Life Table No. 10 (1931)) in somewhat irregular fashion.

XX.—AGE AT WHICH MAXIMUM NUMBER OF DEATHS OCCURRED IN STATIONARY POPULATION AND NUMBER OF DEATHS AT THAT AGE, FOR MALES AND FEMALES IN ENGLISH LIFE TABLES, NOS. 1-10, 1841-1931

Table No.	Year	Males		Females	
		Age	Deaths	Age	Deaths
1	1841	71	1,553	73	1,622
2	1838-1844	72	1,546	73	1,590
3	1838-1854	72	1,519	73	1,584
4	1871-1880	71	1,557	73	1,750
5	1881-1890	70	1,718	73	1,920
6	1891-1900	71	1,781	73	1,990
7	1901-1910	72	2,043	74	2,305
8	1910-1912	73	2,223	76	2,431
9	1920-1922	74	2,557	77	2,768
10	1930-1932	74	2,826	77	3,071

If someone were to make a wager as to the age at which a Canadian male was most likely to die, his best bet would be age 77, provided that that age had not already been reached. For a woman it would be age 78.

Comparison of the age of maximum deaths is one answer to the question "Do people live longer than they used to?" In 1841 in England the rate of mortality (standardized) was more than twice what it was in 1930, and yet the age of maximum deaths had only gone up three years. In the United States there was actually a recession in the maximum age between 1901 and 1930, from 75 down to 73. If we except tropical countries we find that there is very little choice between ages of maximum likelihood of death in different tables. The age increased three years between 1841 and 1931 in England while the expectation of life at age 0 for males rose 18·55 years, from 40·19 to 58·74. Put roughly, the conclusion is that young people live to older ages than formerly, but that older people do not tend to live to yet older ages.

An interesting observation from the series of English Life Tables is that the number of persons dying at this maximum age has steadily increased (1,543 in the stationary male population of 1841 to 2,826 in that of 1931); the deferment of deaths which, a hundred years ago, would have taken place at young or middle ages has led to a kind of "piling up" in the deaths of the stationary population in the seventies.

MAXIMA AND MINIMA ON THE q CURVES

It is noticeable that in most countries there is a drop in the rate of mortality at some point between the ages of 25 and 35. This applies to both sexes separately. Thus we have, for most of the tables here published, a second low point about age 28 before the steep climb that continues with accelerating pace to the end of life. In the tables for Canada and its divisions these age points are as follows:—

XXI.—AGES AT WHICH MAXIMA AND MINIMA OCCUR ON THE MALE AND FEMALE CURVE OF THE RATES OF MORTALITY, CANADA AND REGIONAL DIVISIONS, 1930-32

Regional Division	Males			Females		
	First Min.	Max.	Second Min.	First Min.	Max.	Second Min.
CANADA	11·5	24	26	10	–	–
Maritime Provinces	11	27	31	10	27	31·5
Quebec	12	23	27	10	–	–
Ontario	11·5	28	29	10	–	–
Prairie Provinces	11	26	31	10	–	–
British Columbia	12	24	30	9	27	32

Males reach the first minimum point about two years after females in each case. The second minimum point is plain in each of the male tables but appears only twice in the female ones, being represented in the others only by a point of inflection.

Sir Alfred Watson notes the existence of this dip in the English Life Table of 1931, and infers as we may do for Canada, that it represents a real dip in mortality.

"Another section of the table" he says, "in which the progression of the rates is somewhat irregular is between the ages of 20 and 30. The graduated rates of mortality for males show in this section a maximum value at age 23 followed by decreases to age 26, where the minimum rate of the section occurs. Thereafter the rate increases steadily from age to age. In the case of females there are no instances of decreasing rates of mortality in this span of life but there is a decided retardation in the progression of the rates. Had this feature obtained only among females there might have been an inclination to assign it to mis-statement of age, but the fact that it is more pronounced among males than among females would appear to indicate that some special factor or factors are operating at these ages to disturb the progressive increase in the rates of mortality from age to age."

This failure of the female curve to dip is at least partially to be attributed to deaths from the various types of risk associated with childbirth. In 1930, 1931 and 1932 the total from these causes was 3,801 for Canada, distributed by age as in Statement XXII.

XXII.—DEATHS IN CLASS XI[1]—DISEASES OF PREGNANCY, CHILDBIRTH AND THE PUERPERAL STATE—AS A PERCENTAGE OF TOTAL FEMALE DEATHS, BY AGE GROUP, CANADA, 1930-32

Item	Age Group							
	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Deaths in Class XI	2	226	648	813	832	789	420	70
Total female deaths	2,434	3,630	4,399	4,329	4,202	4,714	4,891	5,409
Deaths in Class XI as percentage of all female deaths	0·08	6·23	14·73	18·78	19·80	16·74	8·59	1·29

[1]Class VIII in 1930.

At the same time it is interesting to note that the fact of unmarried females not, in general, being exposed to this risk, does not give spinsters a lighter mortality than married women, according to the English figures for 1930–32. Selection operates strongly enough in favour of the married class to overcome the extra physical risks of marriage, by a very good margin.

Sir Alfred Watson states under the heading "Conclusion" in his Introduction to the Life Tables for England and Wales for 1931: "The national tables are an aggregation of the experiences of different geographical areas, with their subdivisions, in which the rates of mortality, as between extremes, vary widely at identical ages, a feature which is also found in different divisions of the same area. These national tables constitute a valuable standard for various purposes, but they may not reflect the mortality in any particular area which has contributed to the aggregate experience upon which the tables were framed." An investigation of the tables presented in this volume tends to bring out the same fact, not only insofar as the national table is concerned, but for the regional tables as well. Canada's regional divisions, even more perhaps than those of England, contain so heterogeneous a population that, if we were to make an analysis by counties, it might easily be that a given regional division would contain no county whose mortality was represented by the table for the whole.

The fact, in short, that any life table expresses an average state of affairs indicates at once its value and its limitation. To make the best estimate of his mortality an individual would have to adjust the table to allow for his deviation from that average which an attempt has been made here to represent.

LIFE TABLES

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TABLE 1. Canadian Life Table No. 1, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32

Age x	(A) Males						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
5.....	100,000	262	·99738	·00262	99,869	6,230,394	62·30
6.....	99,738	238	·99761	·00239	99,619	6,130,525	61·47
7.....	99,500	215	·99784	·00216	99,392	6,030,906	60·61
8.....	99,285	193	·99806	·00194	99,188	5,931,514	59·74
9.....	99,092	173	·99825	·00175	99,006	5,832,326	58·86
10.....	98,919	158	·99840	·00160	98,840	5,733,320	57·96
11.....	98,761	150	·99848	·00152	98,686	5,634,480	57·05
12.....	98,611	150	·99848	·00152	98,536	5,535,794	56·14
13.....	98,461	160	·99838	·00162	98,381	5,437,258	55·22
14.....	98,301	179	·99818	·00182	98,212	5,338,877	54·31
15.....	98,122	203	·99793	·00207	98,020	5,240,665	53·41
16.....	97,919	227	·99768	·00232	97,806	5,142,645	52·52
17.....	97,692	248	·99746	·00254	97,568	5,044,839	51·64
18.....	97,444	265	·99728	·00272	97,312	4,947,271	50·77
19.....	97,179	283	·99709	·00291	97,038	4,849,959	49·91
20.....	96,896	298	·99692	·00308	96,747	4,752,921	49·05
21.....	96,598	312	·99677	·00323	96,442	4,656,174	48·20
22.....	96,286	322	·99666	·00334	96,125	4,559,732	47·36
23.....	95,964	326	·99660	·00340	95,801	4,463,607	46·51
24.....	95,638	326	·99659	·00341	95,475	4,367,806	45·67
25.....	95,312	324	·99660	·00340	95,150	4,272,331	44·83
26.....	94,988	321	·99662	·00338	94,828	4,177,181	43·98
27.....	94,667	321	·99661	·00339	94,506	4,082,353	43·12
28.....	94,346	320	·99661	·00339	94,186	3,987,847	42·27
29.....	94,026	320	·99660	·00340	93,866	3,893,661	41·41
30.....	93,706	320	·99659	·00341	93,546	3,799,795	40·55
31.....	93,386	321	·99656	·00344	93,226	3,706,249	39·69
32.....	93,065	328	·99648	·00352	92,901	3,613,023	38·82
33.....	92,737	338	·99636	·00364	92,568	3,520,122	37·96
34.....	92,399	351	·99620	·00380	92,224	3,427,554	37·10
35.....	92,048	366	·99602	·00398	91,865	3,335,330	36·23
36.....	91,682	383	·99582	·00418	91,490	3,243,465	35·38
37.....	91,299	399	·99563	·00437	91,100	3,151,975	34·52
38.....	90,900	415	·99544	·00456	90,692	3,060,875	33·67
39.....	90,485	429	·99526	·00474	90,270	2,970,183	32·83
40.....	90,056	445	·99506	·00494	89,834	2,879,913	31·98
41.....	89,611	462	·99484	·00516	89,380	2,790,079	31·14
42.....	89,149	483	·99458	·00542	88,908	2,700,699	30·29
43.....	88,666	505	·99431	·00569	88,414	2,611,791	29·46
44.....	88,161	526	·99403	·00597	87,898	2,523,377	28·62
45.....	87,635	552	·99370	·00630	87,359	2,435,479	27·79
46.....	87,083	582	·99332	·00668	86,792	2,348,120	26·96
47.....	86,501	618	·99286	·00714	86,192	2,261,328	26·14
48.....	85,883	661	·99230	·00770	85,552	2,175,136	25·33
49.....	85,222	710	·99167	·00833	84,867	2,089,584	24·52
50.....	84,512	763	·99097	·00903	84,130	2,004,717	23·72
51.....	83,749	820	·99021	·00979	83,339	1,920,587	22·93
52.....	82,929	879	·98940	·01060	82,490	1,837,248	22·15
53.....	82,050	939	·98856	·01144	81,580	1,754,758	21·39
54.....	81,111	1,000	·98767	·01233	80,611	1,673,178	20·63

TABLE 1. Canadian Life Table No. 1, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

Age x	(A) Males						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
55.....	80,111	1,065	·98671	·01329	79,578	1,592,567	19·88
56.....	79,046	1,133	·98567	·01433	78,480	1,512,989	19·14
57.....	77,913	1,207	·98451	·01549	77,310	1,434,509	18·41
58.....	76,706	1,282	·98329	·01671	76,065	1,357,199	17·69
59.....	75,424	1,356	·98202	·01798	74,746	1,281,134	16·99
60.....	74,068	1,435	·98062	·01938	73,350	1,206,388	16·29
61.....	72,633	1,522	·97904	·02096	71,872	1,133,038	15·60
62.....	71,111	1,623	·97718	·02282	70,300	1,061,166	14·92
63.....	69,488	1,732	·97508	·02492	68,622	990,866	14·26
64.....	67,756	1,844	·97278	·02722	66,834	922,244	13·61
65.....	65,912	1,961	·97025	·02975	64,932	855,410	12·98
66.....	63,951	2,082	·96744	·03256	62,910	790,478	12·36
67.....	61,869	2,207	·96433	·03567	60,766	727,568	11·76
68.....	59,662	2,326	·96101	·03899	58,499	666,802	11·18
69.....	57,336	2,437	·95750	·04250	56,118	608,303	10·61
70.....	54,899	2,544	·95366	·04634	53,627	552,185	10·06
71.....	52,355	2,653	·94933	·05067	51,028	498,558	9·52
72.....	49,702	2,765	·94437	·05563	48,320	447,530	9·00
73.....	46,937	2,874	·93877	·06123	45,500	399,210	8·51
74.....	44,063	2,968	·93264	·06736	42,579	353,710	8·03
75.....	41,095	3,042	·92597	·07403	39,574	311,131	7·57
76.....	38,053	3,091	·91876	·08124	36,508	271,557	7·14
77.....	34,962	3,112	·91100	·08900	33,406	235,049	6·72
78.....	31,850	3,097	·90276	·09724	30,302	201,643	6·33
79.....	28,753	3,047	·89403	·10597	27,230	171,341	5·96
80.....	25,706	2,963	·88473	·11527	24,224	144,111	5·61
81.....	22,743	2,848	·87479	·12521	21,319	119,887	5·27
82.....	19,895	2,703	·86414	·13586	18,544	98,568	4·95
83.....	17,192	2,530	·85283	·14717	15,927	80,024	4·65
84.....	14,662	2,332	·84093	·15907	13,496	64,097	4·37
85.....	12,330	2,117	·82833	·17167	11,272	50,601	4·10
86.....	10,213	1,890	·81494	·18506	9,268	39,329	3·85
87.....	8,323	1,659	·80067	·19933	7,494	30,061	3·61
88.....	6,664	1,429	·78559	·21441	5,950	22,567	3·39
89.....	5,235	1,206	·76967	·23033	4,632	16,617	3·17
90.....	4,029	996	·75289	·24711	3,531	11,985	2·97
91.....	3,033	803	·73524	·26476	2,632	8,454	2·79
92.....	2,230	632	·71669	·28331	1,914	5,822	2·61
93.....	1,598	484	·69722	·30278	1,356	3,908	2·44
94.....	1,114	360	·67682	·32318	934	2,552	2·29
95.....	754	260	·65546	·34454	624	1,618	2·14
96.....	494	181	·63312	·36688	404	994	2·00
97.....	313	122	·60978	·39022	252	590	1·87
98.....	191	79	·58541	·41459	152	338	1·75
99.....	112	49	·56001	·43999	88	186	1·64
100.....	63	29	·53355	·46645	48	98	1·53
101.....	34	17	·50601	·49399	26	50	1·43
102.....	17	9	·47736	·52264	12	24	1·33
103.....	8	4	·44759	·55241	6	12	1·24
104.....	4	2	·41668	·58332	3	6	1·16
105.....	2	1	·38460	·61540	2	3	1·09
106.....	1	1	·35134	·64866	1	1	1·02

TABLE 1. Canadian Life Table No. 1, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

Age x	(B) Females						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
5.....	100,000	232	·99768	·00232	99,884	6,317,152	63·17
6.....	99,768	197	·99803	·00197	99,670	6,217,268	62·32
7.....	99,571	170	·99829	·00171	99,486	6,117,598	61·44
8.....	99,401	153	·99846	·00154	99,324	6,018,112	60·54
9.....	99,248	143	·99856	·00144	99,177	5,918,788	59·64
10.....	99,105	139	·99860	·00140	99,036	5,819,611	58·72
11.....	98,966	141	·99858	·00142	98,896	5,720,575	57·80
12.....	98,825	147	·99851	·00149	98,752	5,621,679	56·89
13.....	98,678	157	·99841	·00159	98,600	5,522,927	55·97
14.....	98,521	172	·99825	·00175	98,435	5,424,327	55·06
15.....	98,349	192	·99805	·00195	98,253	5,325,892	54·15
16.....	98,157	212	·99784	·00216	98,051	5,227,639	53·26
17.....	97,945	230	·99765	·00235	97,830	5,129,588	52·37
18.....	97,715	248	·99746	·00254	97,591	5,031,758	51·49
19.....	97,467	268	·99725	·00275	97,333	4,934,167	50·62
20.....	97,199	287	·99705	·00295	97,056	4,836,834	49·76
21.....	96,912	303	·99687	·00313	96,760	4,739,778	48·91
22.....	96,609	319	·99670	·00330	96,450	4,643,018	48·06
23.....	96,290	331	·99656	·00344	96,124	4,546,568	47·22
24.....	95,959	342	·99644	·00356	95,788	4,450,444	46·38
25.....	95,617	351	·99633	·00367	95,442	4,354,656	45·54
26.....	95,266	358	·99624	·00376	95,087	4,259,214	44·71
27.....	94,908	365	·99615	·00385	94,726	4,164,127	43·88
28.....	94,543	370	·99609	·00391	94,358	4,069,401	43·04
29.....	94,173	372	·99605	·00395	93,987	3,975,043	42·21
30.....	93,801	373	·99602	·00398	93,614	3,881,056	41·38
31.....	93,428	376	·99598	·00402	93,240	3,787,442	40·54
32.....	93,052	381	·99591	·00409	92,862	3,694,202	39·70
33.....	92,671	389	·99580	·00420	92,477	3,601,340	38·86
34.....	92,282	400	·99567	·00433	92,082	3,508,863	38·02
35.....	91,882	412	·99552	·00448	91,676	3,416,781	37·19
36.....	91,470	424	·99537	·00463	91,258	3,325,105	36·35
37.....	91,046	434	·99523	·00477	90,829	3,233,847	35·52
38.....	90,612	443	·99511	·00489	90,390	3,143,018	34·69
39.....	90,169	451	·99500	·00500	89,944	3,052,628	33·85
40.....	89,718	459	·99488	·00512	89,489	2,962,684	33·02
41.....	89,259	470	·99474	·00526	89,024	2,873,195	32·19
42.....	88,789	483	·99456	·00544	88,548	2,784,171	31·36
43.....	88,306	499	·99435	·00565	88,057	2,695,623	30·53
44.....	87,807	516	·99412	·00588	87,549	2,607,566	29·70
45.....	87,291	537	·99385	·00615	87,022	2,520,017	28·87
46.....	86,754	560	·99355	·00645	86,474	2,432,995	28·04
47.....	86,194	586	·99320	·00680	85,901	2,346,521	27·22
48.....	85,608	615	·99282	·00718	85,300	2,260,620	26·41
49.....	84,993	645	·99241	·00759	84,670	2,175,320	25·59
50.....	84,348	678	·99196	·00804	84,009	2,090,650	24·79
51.....	83,670	717	·99143	·00857	83,312	2,006,641	23·98
52.....	82,953	763	·99080	·00920	82,572	1,923,329	23·19
53.....	82,190	815	·99008	·00992	81,783	1,840,757	22·40
54.....	81,375	873	·98927	·01073	80,939	1,758,974	21·62

TABLE 1. Canadian Life Table No. 1, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

Age x	(B) Females						
	l_x	d_x	p_x	q_x	L_x	T_x	$\mathring{e}_x$
55.....	80,502	935	·98838	·01162	80,034	1,678,035	20·84
56.....	79,567	1,002	·98741	·01259	79,066	1,598,001	20·08
57.....	78,565	1,072	·98636	·01364	78,029	1,518,935	19·33
58.....	77,493	1,143	·98525	·01475	76,922	1,440,906	18·59
59.....	76,350	1,213	·98411	·01589	75,744	1,363,984	17·86
60.....	75,137	1,288	·98286	·01714	74,493	1,288,240	17·15
61.....	73,849	1,370	·98145	·01855	73,164	1,213,747	16·44
62.....	72,479	1,462	·97983	·02017	71,748	1,140,583	15·74
63.....	71,017	1,560	·97804	·02196	70,237	1,068,835	15·05
64.....	69,457	1,660	·97610	·02390	68,627	998,598	14·38
65.....	67,797	1,765	·97397	·02603	66,914	929,971	13·72
66.....	66,032	1,877	·97158	·02842	65,094	863,057	13·07
67.....	64,155	1,998	·96886	·03114	63,156	797,963	12·44
68.....	62,157	2,117	·96594	·03406	61,099	734,807	11·82
69.....	60,040	2,230	·96286	·03714	58,925	673,708	11·22
70.....	57,810	2,345	·95943	·04057	56,638	614,783	10·63
71.....	55,465	2,470	·95547	·04453	54,230	558,145	10·06
72.....	52,995	2,607	·95080	·04920	51,692	503,915	9·51
73.....	50,388	2,753	·94536	·05464	49,012	452,223	8·97
74.....	47,635	2,892	·93929	·06071	46,189	403,211	8·46
75.....	44,743	3,013	·93265	·06735	43,236	357,022	7·98
76.....	41,730	3,109	·92550	·07450	40,176	313,786	7·52
77.....	38,621	3,171	·91789	·08211	37,036	273,610	7·08
78.....	35,450	3,196	·90984	·09016	33,852	236,574	6·67
79.....	32,254	3,183	·90133	·09867	30,662	202,722	6·29
80.....	29,071	3,131	·89231	·10769	27,506	172,060	5·92
81.....	25,940	3,041	·88275	·11725	24,420	144,554	5·57
82.....	22,899	2,916	·87264	·12736	21,441	120,134	5·25
83.....	19,983	2,758	·86200	·13800	18,604	98,693	4·94
84.....	17,225	2,569	·85085	·14915	15,940	80,089	4·65
85.....	14,656	2,358	·83914	·16086	13,477	64,149	4·38
86.....	12,298	2,130	·82684	·17316	11,233	50,672	4·12
87.....	10,168	1,892	·81390	·18610	9,222	39,439	3·88
88.....	8,276	1,652	·80035	·19965	7,450	30,217	3·65
89.....	6,624	1,416	·78619	·21381	5,916	22,767	3·44
90.....	5,208	1,191	·77140	·22860	4,612	16,851	3·24
91.....	4,017	980	·75597	·24403	3,527	12,239	3·05
92.....	3,037	790	·73990	·26010	2,642	8,712	2·87
93.....	2,247	622	·72318	·27682	1,936	6,070	2·70
94.....	1,625	478	·70579	·29421	1,386	4,134	2·54
95.....	1,147	358	·68773	·31227	968	2,748	2·40
96.....	789	261	·66899	·33101	659	1,780	2·26
97.....	528	185	·64955	·35045	436	1,121	2·12
98.....	343	127	·62942	·37058	280	685	2·00
99.....	216	85	·60858	·39142	174	405	1·88
100.....	131	54	·58701	·41299	104	231	1·77
101.....	77	34	·56472	·43528	60	127	1·67
102.....	43	20	·54170	·45830	33	67	1·57
103.....	23	11	·51792	·48208	18	34	1·48
104.....	12	6	·49339	·50661	9	16	1·39
105.....	6	3	·46810	·53190	4	7	1·30
106.....	3	2	·44203	·55797	2	3	1·21
107.....	1	1	·41517	·58483	1	1	1·10

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32

MARITIME PROVINCES

Age x	(A) Males				Age x	(A) Males			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	252	·00252	62·42	55.....	79,091	994	·01257	20·69
6.....	99,748	227	·00228	61·57	56.....	78,097	1,043	·01336	19·95
7.....	99,521	202	·00203	60·71	57.....	77,054	1,100	·01427	19·21
8.....	99,319	178	·00179	59·83	58.....	75,954	1,155	·01520	18·48
9.....	99,141	157	·00158	58·94	59.....	74,799	1,207	·01613	17·76
10.....	98,984	143	·00144	58·03	60.....	73,592	1,264	·01718	17·04
11.....	98,841	136	·00138	57·12	61.....	72,328	1,337	·01849	16·33
12.....	98,705	141	·00143	56·19	62.....	70,991	1,434	·02020	15·63
13.....	98,564	159	·00161	55·27	63.....	69,557	1,556	·02237	14·94
14.....	98,405	189	·00192	54·36	64.....	68,001	1,694	·02491	14·27
15.....	98,216	226	·00230	53·47	65.....	66,307	1,838	·02772	13·63
16.....	97,990	262	·00267	52·59	66.....	64,469	1,979	·03070	13·00
17.....	97,728	291	·00298	51·73	67.....	62,490	2,108	·03373	12·40
18.....	97,437	316	·00324	50·88	68.....	60,382	2,215	·03668	11·81
19.....	97,121	338	·00348	50·04	69.....	58,167	2,305	·03963	11·24
20.....	96,783	358	·00370	49·22	70.....	55,862	2,389	·04276	10·68
21.....	96,425	375	·00389	48·40	71.....	53,473	2,475	·04628	10·14
22.....	96,050	388	·00404	47·59	72.....	50,998	2,569	·05038	9·61
23.....	95,662	397	·00415	46·78	73.....	48,429	2,657	·05487	9·09
24.....	95,265	402	·00422	45·97	74.....	45,772	2,729	·05963	8·59
25.....	94,863	404	·00426	45·16	75.....	43,043	2,794	·06492	8·10
26.....	94,459	404	·00428	44·35	76.....	40,249	2,858	·07102	7·63
27.....	94,055	403	·00429	43·54	77.....	37,391	2,923	·07817	7·18
28.....	93,652	400	·00427	42·73	78.....	34,468	2,989	·08673	6·74
29.....	93,252	392	·00420	41·91	79.....	31,479	3,038	·09651	6·33
30.....	92,860	384	·00414	41·08	80.....	28,441	3,043	·10701	5·96
31.....	92,476	378	·00409	40·25	81.....	25,398	2,990	·11773	5·61
32.....	92,098	379	·00411	39·41	82.....	22,408	2,872	·12816	5·29
33.....	91,719	384	·00419	38·58	83.....	19,536	2,692	·13782	5·00
34.....	91,335	395	·00432	37·74	84.....	16,844	2,477	·14705	4·72
35.....	90,940	408	·00449	36·90	85.....	14,367	2,249	·15657	4·44
36.....	90,532	421	·00465	36·06	86.....	12,118	2,025	·16709	4·18
37.....	90,111	433	·00480	35·23	87.....	10,093	1,810	·17935	3·91
38.....	89,678	441	·00492	34·39	88.....	8,283	1,597	·19280	3·66
39.....	89,237	447	·00501	33·56	89.....	6,686	1,388	·20759	3·41
40.....	88,790	454	·00511	32·73	90.....	5,298	1,186	·22391	3·18
41.....	88,336	464	·00525	31·89	91.....	4,112	995	·24192	2·95
42.....	87,872	477	·00543	31·06	92.....	3,117	816	·26178	2·73
43.....	87,395	495	·00566	30·23	93.....	2,301	653	·28366	2·52
44.....	86,900	514	·00592	29·40	94.....	1,648	507	·30773	2·33
45.....	86,386	537	·00622	28·57	95.....	1,141	381	·33416	2·14
46.....	85,849	566	·00659	27·74	96.....	760	276	·36311	1·96
47.....	85,283	600	·00704	26·92	97.....	484	191	·39475	1·79
48.....	84,683	644	·00760	26·11	98.....	293	126	·42924	1·63
49.....	84,039	693	·00825	25·31	99.....	167	78	·46676	1·48
50.....	83,346	748	·00897	24·51	100.....	89	45	·50747	1·34
51.....	82,598	802	·00971	23·73	101.....	44	24	·55154	1·21
52.....	81,796	854	·01044	22·96	102.....	20	12	·59913	1·09
53.....	80,942	903	·01115	22·20	103.....	8	5	·65042	·98
54.....	80,039	948	·01184	21·44	104.....	3	2	·70557	·88
					105.....	1	1	·76474	·78

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

MARITIME PROVINCES

Age x	(B) Females				Age x	(B) Females			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	229	·00229	62·98	57.....	76,837	1,023	·01331	20·19
6.....	99,771	186	·00186	62·13	58.....	75,814	1,085	·01431	19·46
7.....	99,585	155	·00156	61·24	59.....	74,729	1,148	·01536	18·74
8.....	99,430	135	·00136	60·34					
9.....	99,295	125	·00126	59·42	60.....	73,581	1,213	·01648	18·02
					61.....	72,368	1,283	·01773	17·31
10.....	99,170	123	·00124	58·49	62.....	71,085	1,361	·01914	16·62
11.....	99,047	129	·00130	57·56	63.....	69,724	1,439	·02064	15·93
12.....	98,918	140	·00142	56·64	64.....	68,285	1,517	·02221	15·26
13.....	98,778	156	·00158	55·72					
14.....	98,622	180	·00183	54·80	65.....	66,768	1,599	·02395	14·59
					66.....	65,169	1,690	·02594	13·94
15.....	98,442	209	·00212	53·90	67.....	63,479	1,796	·02829	13·30
16.....	98,233	240	·00244	53·02	68.....	61,683	1,910	·03097	12·67
17.....	97,993	269	·00275	52·15	69.....	59,773	2,026	·03390	12·06
18.....	97,724	301	·00308	51·29					
19.....	97,423	335	·00344	50·45	70.....	57,747	2,145	·03715	11·46
					71.....	55,602	2,265	·04073	10·89
20.....	97,088	370	·00381	49·62	72.....	53,337	2,384	·04469	10·33
21.....	96,718	400	·00414	48·81	73.....	50,953	2,491	·04889	9·79
22.....	96,318	425	·00441	48·01	74.....	48,462	2,583	·05330	9·26
23.....	95,893	443	·00462	47·22					
24.....	95,450	456	·00478	46·43	75.....	45,879	2,667	·05814	8·76
					76.....	43,212	2,749	·06361	8·27
25.....	94,994	465	·00490	45·65	77.....	40,463	2,830	·06993	7·79
26.....	94,529	471	·00498	44·88	78.....	37,633	2,908	·07727	7·34
27.....	94,058	473	·00503	44·10	79.....	34,725	2,968	·08548	6·92
28.....	93,585	469	·00501	43·32					
29.....	93,116	458	·00492	42·53	80.....	31,757	2,995	·09432	6·52
					81.....	28,762	2,978	·10354	6·14
30.....	92,658	447	·00482	41·74	82.....	25,784	2,911	·11289	5·79
31.....	92,211	437	·00474	40·94	83.....	22,873	2,795	·12220	5·47
32.....	91,774	435	·00474	40·14	84.....	20,078	2,643	·13164	5·16
33.....	91,339	444	·00486	39·32					
34.....	90,895	459	·00505	38·51	85.....	17,435	2,466	·14146	4·87
					86.....	14,969	2,274	·15191	4·59
35.....	90,436	477	·00527	37·71	87.....	12,695	2,072	·16325	4·32
36.....	89,959	493	·00548	36·90	88.....	10,623	1,862	·17528	4·06
37.....	89,466	504	·00563	36·10	89.....	8,761	1,648	·18807	3·82
38.....	88,962	505	·00568	35·31					
39.....	88,457	502	·00568	34·50	90.....	7,113	1,435	·20168	3·59
					91.....	5,678	1,227	·21615	3·37
40.....	87,955	499	·00567	33·70	92.....	4,451	1,031	·23156	3·16
41.....	87,456	497	·00568	32·89	93.....	3,420	848	·24796	2·96
42.....	86,959	502	·00577	32·07	94.....	2,572	683	·26541	2·77
43.....	86,457	514	·00594	31·26					
44.....	85,943	529	·00615	30·44	95.....	1,889	536	·28398	2·59
					96.....	1,353	411	·30371	2·42
45.....	85,414	548	·00642	29·63	97.....	942	306	·32468	2·26
46.....	84,866	569	·00671	28·81	98.....	636	221	·34693	2·11
47.....	84,297	593	·00704	28·00	99.....	415	154	·37055	1·97
48.....	83,704	618	·00738	27·20					
49.....	83,086	642	·00773	26·40	100.....	261	103	·39556	1·83
					101.....	158	67	·42205	1·70
50.....	82,444	670	·00813	25·60	102.....	91	41	·45007	1·58
51.....	81,774	702	·00859	24·81	103.....	50	24	·47967	1·47
52.....	81,072	743	·00916	24·02	104.....	26	13	·51092	1·36
53.....	80,329	790	·00983	23·23					
54.....	79,539	842	·01059	22·46	105.....	13	7	·54388	1·25
					106.....	6	3	·57861	1·15
55.....	78,697	900	·01143	21·69	107.....	3	2	·61516	1·04
56.....	77,797	960	·01234	20·94	108.....	1	1	·65360	·90

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

QUEBEC

Age x	(A) Males				Age x	(A) Males			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	345	·00345	60·76	56.....	76,192	1,185	·01555	18·60
6.....	99,655	306	·00307	59·97	57.....	75,007	1,253	·01670	17·89
7.....	99,349	269	·00271	59·15	58.....	73,754	1,331	·01804	17·18
8.....	99,080	235	·00237	58·31	59.....	72,423	1,414	·01953	16·49
9.....	98,845	207	·00209	57·45					
					60.....	71,009	1,504	·02118	15·81
10.....	98,638	184	·00187	56·57	61.....	69,505	1,599	·02301	15·14
11.....	98,454	171	·00174	55·67	62.....	67,906	1,701	·02505	14·48
12.....	98,283	168	·00171	54·77	63.....	66,205	1,805	·02726	13·84
13.....	98,115	177	·00180	53·86	64.....	64,400	1,908	·02962	13·21
14.....	97,938	197	·00201	52·96					
					65.....	62,492	2,012	·03219	12·60
15.....	97,741	223	·00228	52·06	66.....	60,480	2,120	·03505	12·01
16.....	97,518	252	·00258	51·18	67.....	58,360	2,233	·03826	11·42
17.....	97,266	275	·00283	50·31	68.....	56,127	2,342	·04173	10·86
18.....	96,991	298	·00307	49·46	69.....	53,785	2,442	·04541	10·31
19.....	96,693	323	·00334	48·61					
					70.....	51,343	2,539	·04945	9·78
20.....	96,370	346	·00359	47·77	71.....	48,804	2,635	·05399	9·26
21.....	96,024	364	·00379	46·94	72.....	46,169	2,732	·05917	8·76
22.....	95,660	375	·00392	46·11	73.....	43,437	2,827	·06509	8·28
23.....	95,285	375	·00394	45·29	74.....	40,610	2,909	·07163	7·82
24.....	94,910	368	·00388	44·47					
					75.....	37,701	2,967	·07869	7·38
25.....	94,542	357	·00378	43·64	76.....	34,734	2,991	·08612	6·97
26.....	94,185	347	·00368	42·81	77.....	31,743	2,978	·09381	6·58
27.....	93,838	343	·00365	41·96	78.....	28,765	2,918	·10144	6·21
28.....	93,495	344	·00368	41·11	79.....	25,847	2,819	·10908	5·85
29.....	93,151	348	·00374	40·26					
					80.....	23,028	2,699	·11722	5·51
30.....	92,803	355	·00383	39·41	81.....	20,329	2,569	·12635	5·18
31.....	92,448	364	·00394	38·56	82.....	17,760	2,432	·13694	4·85
32.....	92,084	376	·00408	37·71	83.....	15,328	2,292	·14955	4·54
33.....	91,708	390	·00425	36·87	84.....	13,036	2,136	·16386	4·25
34.....	91,318	406	·00445	36·02					
					85.....	10,900	1,952	·17904	3·99
35.....	90,912	425	·00467	35·18	86.....	8,948	1,738	·19425	3·75
36.....	90,487	445	·00492	34·34	87.....	7,210	1,504	·20864	3·53
37.....	90,042	466	·00517	33·51	88.....	5,706	1,274	·22330	3·33
38.....	89,576	487	·00544	32·68	89.....	4,432	1,056	·23823	3·15
39.....	89,089	510	·00573	31·86					
					90.....	3,376	856	·25343	2·97
40.....	88,579	535	·00604	31·04	91.....	2,520	678	·26890	2·81
41.....	88,044	559	·00635	30·22	92.....	1,842	524	·28464	2·66
42.....	87,485	582	·00665	29·41	93.....	1,318	396	·30065	2·52
43.....	86,903	600	·00690	28·61	94.....	922	292	·31693	2·39
44.....	86,303	613	·00710	27·80					
					95.....	630	210	·33348	2·27
45.....	85,690	628	·00733	27·00	96.....	420	147	·35030	2·16
46.....	85,062	650	·00764	26·19	97.....	273	100	·36739	2·05
47.....	84,412	684	·00810	25·39	98.....	173	67	·38475	1·95
48.....	83,728	733	·00875	24·59	99.....	106	43	·40238	1·85
49.....	82,995	792	·00954	23·81					
					100.....	63	26	·42028	1·76
50.....	82,203	857	·01042	23·03	101.....	37	16	·43845	1·68
51.....	81,346	922	·01134	22·27	102.....	21	10	·45689	1·60
52.....	80,424	984	·01223	21·52	103.....	11	5	·47560	1·52
53.....	79,440	1,036	·01304	20·78	104.....	6	3	·49458	1·45
54.....	78,404	1,082	·01380	20·05					
					105.....	3	2	·51383	1·38
55.....	77,322	1,130	·01461	19·32	106.....	1	1	·53335	1·31

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

QUEBEC

Age x	(B) Females				Age x	(B) Females			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	326	·00326	60·69	57.....	74,212	1,101	·01484	18·57
6.....	99,674	273	·00274	59·88	58.....	73,111	1,186	·01622	17·84
7.....	99,401	233	·00234	59·05	59.....	71,925	1,278	·01777	17·13
8.....	99,168	204	·00206	58·19					
9.....	98,964	187	·00189	57·30	60.....	70,647	1,375	·01947	16·43
					61.....	69,272	1,474	·02128	15·75
10.....	98,777	179	·00181	56·41	62.....	67,798	1,571	·02317	15·08
11.....	98,598	179	·00182	55·51	63.....	66,227	1,656	·02501	14·42
12.....	98,419	188	·00191	54·61	64.....	64,571	1,733	·02684	13·78
13.....	98,231	202	·00206	53·72					
14.....	98,029	226	·00231	52·83	65.....	62,838	1,811	·02882	13·15
					66.....	61,027	1,900	·03114	12·52
15.....	97,803	255	·00261	51·95	67.....	59,127	2,008	·03396	11·91
16.....	97,548	285	·00292	51·08	68.....	57,119	2,128	·03725	11·31
17.....	97,263	309	·00318	50·23	69.....	54,991	2,250	·04092	10·73
18.....	96,954	329	·00339	49·39					
19.....	96,625	346	·00358	48·56	70.....	52,741	2,372	·04498	10·17
					71.....	50,369	2,493	·04949	9·62
20.....	96,279	363	·00377	47·73	72.....	47,876	2,609	·05449	9·10
21.....	95,916	379	·00395	46·91	73.....	45,267	2,711	·05990	8·59
22.....	95,537	394	·00412	46·09	74.....	42,556	2,796	·06570	8·11
23.....	95,143	409	·00430	45·28					
24.....	94,734	425	·00449	44·47	75.....	39,760	2,863	·07200	7·64
					76.....	36,897	2,911	·07889	7·20
25.....	94,309	439	·00466	43·67	77.....	33,986	2,940	·08651	6·77
26.....	93,870	453	·00483	42·87	78.....	31,046	2,941	·09473	6·36
27.....	93,417	464	·00497	42·08	79.....	28,105	2,908	·10348	5·98
28.....	92,953	472	·00508	41·29					
29.....	92,481	479	·00518	40·50	80.....	25,197	2,845	·11293	5·61
					81.....	22,352	2,755	·12324	5·26
30.....	92,002	484	·00526	39·70	82.....	19,597	2,637	·13455	4·93
31.....	91,518	489	·00534	38·91	83.....	16,960	2,500	·14742	4·62
32.....	91,029	495	·00544	38·12	84.....	14,460	2,339	·16173	4·33
33.....	90,534	501	·00553	37·32					
34.....	90,033	507	·00563	36·53	85.....	12,121	2,142	·17668	4·07
					86.....	9,979	1,911	·19146	3·83
35.....	89,526	513	·00573	35·73	87.....	8,068	1,656	·20528	3·62
36.....	89,013	521	·00585	34·93	88.....	6,412	1,405	·21916	3·42
37.....	88,492	531	·00600	34·14	89.....	5,007	1,167	·23310	3·25
38.....	87,961	544	·00618	33·34					
39.....	87,417	559	·00640	32·54	90.....	3,840	949	·24709	3·08
					91.....	2,891	755	·26115	2·93
40.....	86,858	576	·00663	31·75	92.....	2,136	588	·27526	2·78
41.....	86,282	593	·00687	30·96	93.....	1,548	448	·28943	2·65
42.....	85,689	610	·00712	30·17	94.....	1,100	334	·30366	2·53
43.....	85,079	626	·00736	29·38					
44.....	84,453	642	·00760	28·60	95.....	766	244	·31795	2·41
					96.....	522	173	·33230	2·31
45.....	83,811	658	·00785	27·81	97.....	349	121	·34671	2·21
46.....	83,153	676	·00813	27·03	98.....	228	82	·36117	2·11
47.....	82,477	695	·00843	26·25	99.....	146	55	·37570	2·02
48.....	81,782	715	·00874	25·47					
49.....	81,067	734	·00905	24·69	100.....	91	36	·39028	1·94
					101.....	55	22	·40492	1·86
50.....	80,333	755	·00940	23·91	102.....	33	14	·41962	1·78
51.....	79,578	782	·00983	23·13	103.....	19	8	·43438	1·71
52.....	78,796	819	·01039	22·35	104.....	11	5	·44920	1·64
53.....	77,977	862	·01105	21·58					
54.....	77,115	910	·01180	20·82	105.....	6	3	·46407	1·57
					106.....	3	1	·47901	1·49
55.....	76,205	965	·01266	20·06	107.....	2	1	·49400	1·40
56.....	75,240	1,028	·01366	19·31	108.....	1	1	·50905	1·28

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

ONTARIO

Age x	(A) Males				Age x	(A) Males			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	215	·00215	62·20	55.....	80,313	1,112	·01385	19·49
6.....	99,785	206	·00206	61·33	56.....	79,201	1,188	·01500	18·76
7.....	99,579	192	·00193	60·46	57.....	78,013	1,268	·01625	18·04
8.....	99,387	178	·00179	59·57	58.....	76,745	1,348	·01756	17·33
9.....	99,209	163	·00164	58·68	59.....	75,397	1,426	·01891	16·63
10.....	99,046	151	·00152	57·78	60.....	73,971	1,508	·02038	15·94
11.....	98,895	143	·00145	56·86	61.....	72,463	1,598	·02205	15·26
12.....	98,752	143	·00145	55·95	62.....	70,865	1,699	·02398	14·59
13.....	98,609	153	·00155	55·03	63.....	69,166	1,809	·02615	13·94
14.....	98,456	169	·00172	54·11	64.....	67,357	1,920	·02850	13·30
15.....	98,287	191	·00194	53·20	65.....	65,437	2,034	·03109	12·67
16.....	98,096	212	·00216	52·31	66.....	63,403	2,153	·03396	12·06
17.....	97,884	230	·00235	51·42	67.....	61,250	2,275	·03714	11·47
18.....	97,654	244	·00250	50·54	68.....	58,975	2,390	·04052	10·89
19.....	97,410	259	·00266	49·66	69.....	56,585	2,492	·04404	10·33
20.....	97,151	272	·00280	48·79	70.....	54,093	2,593	·04793	9·79
21.....	96,879	283	·00292	47·93	71.....	51,500	2,698	·05239	9·25
22.....	96,596	293	·00303	47·07	72.....	48,802	2,812	·05762	8·74
23.....	96,303	300	·00311	46·21	73.....	45,990	2,931	·06373	8·24
24.....	96,003	304	·00317	45·35	74.....	43,059	3,039	·07058	7·77
25.....	95,699	307	·00321	44·50	75.....	40,020	3,122	·07802	7·32
26.....	95,392	310	·00325	43·64	76.....	36,898	3,170	·08590	6·90
27.....	95,082	312	·00328	42·78	77.....	33,728	3,173	·09408	6·50
28.....	94,770	314	·00331	41·92	78.....	30,555	3,127	·10235	6·12
29.....	94,456	313	·00331	41·05	79.....	27,428	3,039	·11080	5·76
30.....	94,143	313	·00332	40·19	80.....	24,389	2,921	·11976	5·42
31.....	93,830	313	·00334	39·32	81.....	21,468	2,781	·12954	5·09
32.....	93,517	319	·00341	38·45	82.....	18,687	2,625	·14046	4·77
33.....	93,198	329	·00353	37·58	83.....	16,062	2,450	·15254	4·47
34.....	92,869	341	·00367	36·71	84.....	13,612	2,254	·16557	4·18
35.....	92,528	356	·00385	35·85	85.....	11,358	2,039	·17952	3·91
36.....	92,172	372	·00404	34·98	86.....	9,319	1,811	·19438	3·66
37.....	91,800	389	·00424	34·12	87.....	7,508	1,578	·21014	3·42
38.....	91,411	407	·00445	33·27	88.....	5,930	1,345	·22681	3·20
39.....	91,004	425	·00467	32·41	89.....	4,585	1,121	·24439	2·99
40.....	90,579	445	·00491	31·56	90.....	3,464	911	·26286	2·79
41.....	90,134	466	·00517	30·71	91.....	2,553	721	·28222	2·61
42.....	89,668	490	·00547	29·87	92.....	1,832	554	·30246	2·44
43.....	89,178	516	·00579	29·03	93.....	1,278	414	·32357	2·28
44.....	88,662	543	·00613	28·20	94.....	864	299	·34555	2·13
45.....	88,119	573	·00650	27·37	95.....	565	208	·36838	1·99
46.....	87,546	606	·00692	26·55	96.....	357	140	·39206	1·86
47.....	86,940	645	·00742	25·73	97.....	217	90	·41658	1·74
48.....	86,295	689	·00799	24·92	98.....	127	56	·44193	1·63
49.....	85,606	737	·00861	24·11	99.....	71	33	·46811	1·52
50.....	84,869	789	·00930	23·32	100.....	38	19	·49510	1·43
51.....	84,080	846	·01006	22·53	101.....	19	10	·52290	1·33
52.....	83,234	907	·01090	21·76	102.....	9	5	·55150	1·25
53.....	82,327	973	·01182	20·99	103.....	4	2	·58089	1·17
54.....	81,354	1,041	·01279	20·24	104.....	2	1	·61107	1·09
					105.....	1	1	·64202	1·01

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32.—Con.

ONTARIO

Age x	(B) Females				Age x	(B) Females			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	165	·00165	63·86	55.....	82,188	985	·01199	20·61
6.....	99,835	146	·00146	62·97	56.....	81,203	1,058	·01303	19·85
7.....	99,689	132	·00132	62·06	57.....	80,145	1,130	·01410	19·10
8.....	99,557	122	·00123	61·14	58.....	79,015	1,195	·01513	18·37
9.....	99,435	116	·00117	60·21	59.....	77,820	1,255	·01613	17·65
10.....	99,319	114	·00115	59·28	60.....	76,565	1,318	·01721	16·93
11.....	99,205	116	·00117	58·35	61.....	75,247	1,391	·01849	16·21
12.....	99,089	121	·00122	57·42	62.....	73,856	1,482	·02007	15·51
13.....	98,968	128	·00129	56·49	63.....	72,374	1,589	·02195	14·82
14.....	98,840	139	·00141	55·56	64.....	70,785	1,702	·02405	14·14
15.....	98,701	153	·00155	54·64	65.....	69,083	1,823	·02639	13·47
16.....	98,548	168	·00170	53·72	66.....	67,260	1,949	·02897	12·83
17.....	98,380	183	·00186	52·81	67.....	65,311	2,077	·03180	12·19
18.....	98,197	199	·00203	51·91	68.....	63,234	2,192	·03466	11·58
19.....	97,998	219	·00223	51·02	69.....	61,042	2,292	·03754	10·98
20.....	97,779	238	·00243	50·13	70.....	58,750	2,395	·04077	10·38
21.....	97,541	256	·00262	49·25	71.....	56,355	2,519	·04469	9·80
22.....	97,285	269	·00277	48·38	72.....	53,836	2,672	·04963	9·24
23.....	97,016	279	·00288	47·51	73.....	51,164	2,854	·05578	8·70
24.....	96,737	286	·00296	46·65	74.....	48,310	3,040	·06292	8·18
25.....	96,451	291	·00302	45·78	75.....	45,270	3,203	·07076	7·70
26.....	96,160	295	·00307	44·92	76.....	42,067	3,324	·07901	7·24
27.....	95,865	300	·00313	44·06	77.....	38,743	3,385	·08738	6·82
28.....	95,565	304	·00318	43·19	78.....	35,358	3,386	·09577	6·43
29.....	95,261	307	·00322	42·33	79.....	31,972	3,337	·10437	6·06
30.....	94,954	310	·00326	41·47	80.....	28,635	3,245	·11333	5·70
31.....	94,644	314	·00332	40·60	81.....	25,390	3,118	·12281	5·37
32.....	94,330	323	·00342	39·73	82.....	22,272	2,961	·13295	5·05
33.....	94,007	336	·00357	38·87	83.....	19,311	2,770	·14346	4·75
34.....	93,671	352	·00376	38·00	84.....	16,541	2,551	·15423	4·46
35.....	93,319	370	·00397	37·15	85.....	13,990	2,318	·16572	4·18
36.....	92,949	388	·00417	36·29	86.....	11,672	2,082	·17836	3·91
37.....	92,561	402	·00434	35·44	87.....	9,590	1,847	·19261	3·65
38.....	92,159	409	·00444	34·59	88.....	7,743	1,612	·20814	3·41
39.....	91,750	413	·00450	33·75	89.....	6,131	1,380	·22504	3·17
40.....	91,337	416	·00456	32·90	90.....	4,751	1,156	·24341	2·95
41.....	90,921	423	·00465	32·05	91.....	3,595	947	·26335	2·73
42.....	90,498	437	·00483	31·19	92.....	2,648	755	·28496	2·53
43.....	90,061	460	·00511	30·34	93.....	1,893	584	·30834	2·34
44.....	89,601	488	·00545	29·50	94.....	1,309	437	·33358	2·16
45.....	89,113	520	·00584	28·65	95.....	872	315	·36079	1·99
46.....	88,593	555	·00626	27·82	96.....	557	217	·39006	1·83
47.....	88,038	591	·00671	26·99	97.....	340	143	·42148	1·68
48.....	87,447	624	·00714	26·17	98.....	197	90	·45517	1·54
49.....	86,823	658	·00758	25·35	99.....	107	53	·49121	1·41
50.....	86,165	694	·00806	24·54	100.....	54	29	·52970	1·29
51.....	85,471	736	·00861	23·74	101.....	25	14	·57075	1·17
52.....	84,735	786	·00928	22·94	102.....	11	7	·61445	1·07
53.....	83,949	847	·01009	22·15	103.....	4	3	·66089	·97
54.....	83,102	914	·01100	21·37	104.....	1	1	·71019	·87

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

PRAIRIE PROVINCES

Age x	(A) Males				Age x	(A) Males			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	207	·00207	64·45	55.....	83,722	944	·01127	20·78
6.....	99,793	188	·00188	63·58	56.....	82,778	1,023	·01236	20·01
7.....	99,605	171	·00172	62·70	57.....	81,755	1,103	·01349	19·25
8.....	99,434	157	·00158	61·80	58.....	80,652	1,178	·01461	18·51
9.....	99,277	147	·00148	60·90	59.....	79,474	1,251	·01574	17·77
10.....	99,130	140	·00141	59·99	60.....	78,223	1,326	·01695	17·05
11.....	98,990	138	·00139	59·07	61.....	76,897	1,410	·01834	16·34
12.....	98,852	140	·00142	58·16	62.....	75,487	1,509	·01999	15·63
13.....	98,712	149	·00151	57·24	63.....	73,978	1,616	·02184	14·94
14.....	98,563	164	·00166	56·32	64.....	72,362	1,725	·02384	14·26
15.....	98,399	181	·00184	55·42	65.....	70,637	1,842	·02607	13·60
16.....	98,218	198	·00202	54·52	66.....	68,795	1,968	·02860	12·95
17.....	98,020	213	·00217	53·63	67.....	66,827	2,107	·03153	12·32
18.....	97,807	223	·00228	52·74	68.....	64,720	2,254	·03482	11·70
19.....	97,584	232	·00238	51·86	69.....	62,466	2,400	·03842	11·11
20.....	97,352	240	·00247	50·98	70.....	60,066	2,545	·04237	10·53
21.....	97,112	247	·00254	50·11	71.....	57,521	2,686	·04670	9·97
22.....	96,865	252	·00260	49·24	72.....	54,835	2,822	·05147	9·44
23.....	96,613	256	·00265	48·36	73.....	52,013	2,941	·05654	8·92
24.....	96,357	257	·00267	47·49	74.....	49,072	3,037	·06188	8·43
25.....	96,100	259	·00269	46·62	75.....	46,035	3,116	·06769	7·95
26.....	95,841	258	·00269	45·74	76.....	42,919	3,183	·07416	7·49
27.....	95,583	257	·00269	44·86	77.....	39,736	3,238	·08149	7·05
28.....	95,326	255	·00267	43·98	78.....	36,498	3,281	·08990	6·63
29.....	95,071	250	·00263	43·10	79.....	33,217	3,297	·09926	6·24
30.....	94,821	245	·00258	42·21	80.....	29,920	3,268	·10923	5·87
31.....	94,576	242	·00256	41·32	81.....	26,652	3,185	·11949	5·53
32.....	94,334	245	·00260	40·42	82.....	23,467	3,043	·12969	5·21
33.....	94,089	254	·00270	39·53	83.....	20,424	2,843	·13921	4·91
34.....	93,835	267	·00285	38·63	84.....	17,581	2,607	·14829	4·62
35.....	93,568	284	·00303	37·74	85.....	14,974	2,363	·15784	4·34
36.....	93,284	300	·00322	36·86	86.....	12,611	2,129	·16880	4·06
37.....	92,984	315	·00339	35·97	87.....	10,482	1,909	·18208	3·79
38.....	92,669	328	·00354	35·09	88.....	8,573	1,689	·19699	3·52
39.....	92,341	339	·00367	34·22	89.....	6,884	1,471	·21375	3·26
40.....	92,002	351	·00381	33·34	90.....	5,413	1,259	·23256	3·01
41.....	91,651	364	·00397	32·47	91.....	4,154	1,054	·25364	2·77
42.....	91,287	382	·00419	31·59	92.....	3,100	859	·27720	2·54
43.....	90,905	405	·00446	30·72	93.....	2,241	680	·30345	2·32
44.....	90,500	432	·00477	29·86	94.....	1,561	519	·33260	2·12
45.....	90,068	460	·00511	29·00	95.....	1,042	380	·36486	1·92
46.....	89,608	492	·00549	28·15	96.....	662	265	·40045	1·74
47.....	89,116	526	·00590	27·30	97.....	397	175	·43958	1·57
48.....	88,590	561	·00633	26·46	98.....	222	107	·48245	1·42
49.....	88,029	596	·00677	25·62	99.....	115	61	·52928	1·27
50.....	87,433	634	·00725	24·80	100.....	54	31	·58028	1·13
51.....	86,799	679	·00782	23·97	101.....	23	15	·63567	1·01
52.....	86,120	733	·00851	23·16	102.....	8	6	·69564	·89
53.....	85,387	797	·00933	22·35	103.....	2	2	·76043	·78
54.....	84,590	868	·01026	21·56					

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

PRAIRIE PROVINCES

Age x	(B) Females				Age x	(B) Females			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	176	·00176	65·37	56.....	82,878	896	·01081	21·06
6.....	99,824	154	·00154	64·48	57.....	81,982	953	·01163	20·28
7.....	99,670	138	·00138	63·58	58.....	81,029	1,012	·01249	19·51
8.....	99,532	126	·00127	62·67	59.....	80,017	1,068	·01335	18·75
9.....	99,406	120	·00121	61·75					
					60.....	78,949	1,130	·01431	18·00
10.....	99,286	119	·00120	60·82	61.....	77,819	1,205	·01548	17·26
11.....	99,167	120	·00121	59·90	62.....	76,614	1,299	·01695	16·52
12.....	99,047	124	·00125	58·97	63.....	75,315	1,409	·01871	15·80
13.....	98,923	130	·00131	58·04	64.....	73,906	1,530	·02070	15·09
14.....	98,793	138	·00140	57·12					
					65.....	72,376	1,659	·02292	14·40
15.....	98,655	150	·00152	56·20	66.....	70,717	1,796	·02540	13·72
16.....	98,505	162	·00164	55·28	67.....	68,921	1,940	·02815	13·07
17.....	98,343	174	·00177	54·37	68.....	66,981	2,085	·03113	12·43
18.....	98,169	188	·00192	53·47	69.....	64,896	2,227	·03432	11·81
19.....	97,981	204	·00208	52·57					
					70.....	62,669	2,368	·03779	11·22
20.....	97,777	220	·00225	51·68	71.....	60,301	2,510	·04162	10·64
21.....	97,557	235	·00241	50·79	72.....	57,791	2,650	·04586	10·08
22.....	97,322	247	·00254	49·91	73.....	55,141	2,776	·05034	9·54
23.....	97,075	256	·00264	49·04	74.....	52,365	2,881	·05502	9·02
24.....	96,819	263	·00272	48·17					
					75.....	49,484	2,977	·06016	8·51
25.....	96,556	268	·00278	47·30	76.....	46,507	3,070	·06602	8·02
26.....	96,288	273	·00284	46·43	77.....	43,437	3,165	·07287	7·56
27.....	96,015	280	·00292	45·56	78.....	40,272	3,265	·08108	7·11
28.....	95,735	287	·00300	44·69	79.....	37,007	3,348	·09046	6·69
29.....	95,448	294	·00308	43·82					
					80.....	33,659	3,382	·10048	6·31
30.....	95,154	301	·00316	42·96	81.....	30,277	3,348	·11058	5·96
31.....	94,853	308	·00325	42·09	82.....	26,929	3,237	·12022	5·64
32.....	94,545	316	·00334	41·23	83.....	23,692	3,055	·12895	5·34
33.....	94,229	324	·00344	40·36	84.....	20,637	2,830	·13712	5·06
34.....	93,905	332	·00354	39·50					
					85.....	17,807	2,589	·14542	4·78
35.....	93,573	341	·00364	38·64	86.....	15,218	2,352	·15455	4·51
36.....	93,232	351	·00376	37·78	87.....	12·866	2,125	·16520	4·24
37.....	92,881	361	·00389	36·92	88.....	10,741	1,900	·17685	3·98
38.....	92,520	374	·00404	36·06	89.....	8,841	1,677	·18965	3·73
39.....	92,146	389	·00422	35·21					
					90.....	7,164	1,460	·20377	3·48
40.....	91,757	405	·00441	34·35	91.....	5,704	1,251	·21937	3·25
41.....	91,352	419	·00459	33·50	92.....	4,453	1,054	·23662	3·02
42.....	90,933	432	·00475	32·66	93.....	3,399	869	·25567	2·80
43.....	90,501	438	·00484	31·81	94.....	2,530	700	·27668	2·59
44.....	90,063	440	·00488	30·96					
					95.....	1,830	549	·29982	2·39
45.....	89,623	441	·00492	30·11	96.....	1,281	417	·32525	2·20
46.....	89,182	449	·00503	29·26	97.....	864	305	·35313	2·02
47.....	88,733	469	·00529	28·40	98.....	559	214	·38362	1·85
48.....	88,264	503	·00570	27·55	99.....	345	144	·41689	1·69
49.....	87,761	547	·00623	26·71					
					100.....	201	91	·45309	1·54
50.....	87,214	597	·00685	25·87	101.....	110	54	·49239	1·39
51.....	86,617	650	·00750	25·05	102.....	56	30	·53494	1·26
52.....	85,967	701	·00815	24·23	103.....	26	15	·58092	1·14
53.....	85,266	749	·00878	23·43	104.....	11	7	·63047	1·02
54.....	84,517	795	·00941	22·63					
					105.....	4	3	·68377	·92
55.....	83,722	844	·01008	21·84	106.....	1	1	·74098	·82

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

BRITISH COLUMBIA

Age x	(A) Males				Age x	(A) Males			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	270	·00270	61·78	55.....	78,353	1,073	·01370	20·24
6.....	99,730	261	·00262	60·95	56.....	77,280	1,131	·01464	19·51
7.....	99,469	243	·00244	60·11	57.....	76,149	1,194	·01568	18·79
8.....	99,226	218	·00220	59·25	58.....	74,955	1,255	·01674	18·08
9.....	99,008	193	·00195	58·38	59.....	73,700	1,313	·01781	17·38
10.....	98,815	171	·00173	57·50	60.....	72,387	1,374	·01898	16·69
11.....	98,644	156	·00158	56·59	61.....	71,013	1,444	·02033	16·00
12.....	98,488	153	·00155	55·68	62.....	69,569	1,528	·02197	15·32
13.....	98,335	164	·00167	54·77	63.....	68,041	1,624	·02387	14·66
14.....	98,171	188	·00191	53·86	64.....	66,417	1,724	·02596	14·00
15.....	97,983	218	·00222	52·96	65.....	64,693	1,830	·02828	13·36
16.....	97,765	249	·00255	52·08	66.....	62,863	1,941	·03087	12·74
17.....	97,516	277	·00284	51·21	67.....	60,922	2,056	·03375	12·13
18.....	97,239	302	·00311	50·36	68.....	58,866	2,170	·03687	11·53
19.....	96,937	330	·00340	49·51	69.....	56,696	2,279	·04019	10·95
20.....	96,607	356	·00369	48·68	70.....	54,417	2,385	·04382	10·39
21.....	96,251	378	·00393	47·86	71.....	52,032	2,490	·04786	9·85
22.....	95,873	393	·00410	47·04	72.....	49,542	2,596	·05240	9·32
23.....	95,480	400	·00419	46·23	73.....	46,946	2,686	·05722	8·80
24.....	95,080	400	·00421	45·43	74.....	44,260	2,756	·06227	8·31
25.....	94,680	397	·00419	44·62	75.....	41,504	2,816	·06786	7·83
26.....	94,283	393	·00417	43·80	76.....	38,688	2,875	·07432	7·36
27.....	93,890	391	·00416	42·98	77.....	35,813	2,936	·08197	6·91
28.....	93,499	389	·00416	42·16	78.....	32,877	3,000	·09126	6·48
29.....	93,110	386	·00415	41·34	79.....	29,877	3,046	·10196	6·08
30.....	92,724	384	·00414	40·51	80.....	26,831	3,043	·11343	5·72
31.....	92,340	384	·00416	39·67	81.....	23,788	2,973	·12497	5·38
32.....	91,956	387	·00421	38·84	82.....	20,815	2,829	·13593	5·08
33.....	91,569	396	·00432	38·00	83.....	17,986	2,619	·14561	4·80
34.....	91,173	407	·00446	37·16	84.....	15,367	2,373	·15444	4·54
35.....	90,766	420	·00463	36·32	85.....	12,994	2,124	·16349	4·27
36.....	90,346	434	·00480	35·49	86.....	10,870	1,889	·17380	4·01
37.....	89,912	445	·00495	34·66	87.....	8,981	1,674	·18644	3·75
38.....	89,467	454	·00507	33·83	88.....	7,307	1,466	·20061	3·49
39.....	89,013	459	·00516	33·00	89.....	5,841	1,265	·21655	3·24
40.....	88,554	466	·00526	32·17	90.....	4,576	1,073	·23451	3·00
41.....	88,088	476	·00540	31·34	91.....	3,503	892	·25473	2·77
42.....	87,612	491	·00560	30·50	92.....	2,611	724	·27745	2·55
43.....	87,121	511	·00587	29·67	93.....	1,887	572	·30293	2·33
44.....	86,610	535	·00618	28·84	94.....	1,315	436	·33140	2·13
45.....	86,075	562	·00653	28·02	95.....	879	319	·36310	1·93
46.....	85,513	595	·00696	27·20	96.....	560	223	·39830	1·75
47.....	84,918	634	·00747	26·39	97.....	337	147	·43722	1·58
48.....	84,284	680	·00807	25·58	98.....	190	91	·48011	1·42
49.....	83,604	732	·00876	24·79	99.....	99	52	·52722	1·27
50.....	82,872	789	·00952	24·00	100.....	47	27	·57879	1·13
51.....	82,083	847	·01032	23·23	101.....	20	13	·63506	1·01
52.....	81,236	905	·01114	22·47	102.....	7	5	·69629	·89
53.....	80,331	961	·01196	21·71	103.....	2	2	·76271	·78
54.....	79,370	1,017	·01281	20·97					

TABLE 2. Life Tables for regional divisions of Canada, (A) Males, (B) Females, based on population, 1931 and deaths, 1930-32—Con.

BRITISH COLUMBIA

Age x	(B) Females				Age x	(B) Females			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
5.....	100,000	269	·00269	64·34	57.....	80,224	980	·01221	20·27
6.....	99,731	221	·00222	63·52	58.....	79,244	1,059	·01337	19·51
7.....	99,510	191	·00192	62·66	59.....	78,185	1,144	·01463	18·77
8.....	99,319	174	·00175	61·78					
9.....	99,145	168	·00169	60·88	60.....	77,041	1,232	·01599	18·04
					61.....	75,809	1,322	·01744	17·33
10.....	98,977	168	·00170	59·98	62.....	74,487	1,414	·01898	16·63
11.....	98,809	174	·00176	59·09	63.....	73,073	1,503	·02057	15·94
12.....	98,635	182	·00185	58·19	64.....	71,570	1,591	·02223	15·26
13.....	98,453	190	·00193	57·30					
14.....	98,263	201	·00205	56·41	65.....	69,979	1,679	·02400	14·60
					66.....	68,300	1,770	·02592	13·94
15.....	98,062	216	·00220	55·52	67.....	66,530	1,866	·02804	13·30
16.....	97,846	229	·00234	54·64	68.....	64,664	1,946	·03010	12·67
17.....	97,617	242	·00248	53·77	69.....	62,718	2,011	·03206	12·05
18.....	97,375	252	·00259	52·90					
19.....	97,123	262	·00270	52·04	70.....	60,707	2,084	·03433	11·43
					71.....	58,623	2,186	·03729	10·82
20.....	96,861	272	·00281	51·18	72.....	56,437	2,334	·04136	10·22
21.....	96,589	283	·00293	50·32	73.....	54,103	2,539	·04692	9·64
22.....	96,306	295	·00306	49·47	74.....	51,564	2,769	·05370	9·09
23.....	96,011	310	·00323	48·62					
24.....	95,701	329	·00344	47·77	75.....	48,795	2,983	·06113	8·58
					76.....	45,812	3,142	·06858	8·10
25.....	95,372	348	·00365	46·94	77.....	42,670	3,221	·07548	7·66
26.....	95,024	363	·00382	46·11	78.....	39,449	3,199	·08108	7·25
27.....	94,661	371	·00392	45·28	79.....	36,250	3,109	·08577	6·84
28.....	94,290	369	·00391	44·46					
29.....	93,921	358	·00381	43·63	80.....	33,141	3,005	·09067	6·44
					81.....	30,136	2,920	·09688	6·03
30.....	93,563	345	·00369	42·79	82.....	27,216	2,872	·10551	5·62
31.....	93,218	334	·00358	41·95	83.....	24,344	2,864	·11765	5·23
32.....	92,884	330	·00355	41·10	84.....	21,480	2,848	·13257	4·86
33.....	92,554	333	·00360	40·24					
34.....	92,221	341	·00370	39·39	85.....	18,632	2,769	·14862	4·52
					86.....	15,863	2,604	·16414	4·22
35.....	91,880	352	·00383	38·53	87.....	13,259	2,353	·17747	3·96
36.....	91,528	362	·00396	37·68	88.....	10,906	2,092	·19180	3·70
37.....	91,166	372	·00408	36·83	89.....	8,814	1,826	·20714	3·46
38.....	90,794	377	·00415	35·98					
39.....	90,417	380	·00420	35·12	90.....	6,988	1,562	·22347	3·24
					91.....	5,426	1,307	·24081	3·02
40.....	90,037	384	·00426	34·27	92.....	4,119	1,067	·25915	2·82
41.....	89,653	390	·00435	33·41	93.....	3,052	850	·27850	2·64
42.....	89,263	403	·00452	32·56	94.....	2,202	658	·29884	2·46
43.....	88,860	425	·00478	31·70					
44.....	88,435	452	·00511	30·85	95.....	1,544	494	·32019	2·30
					96.....	1,050	360	·34254	2·14
45.....	87,983	482	·00548	30·01	97.....	690	252	·36589	2·00
46.....	87,501	513	·00586	29·17	98.....	438	171	·39025	1·87
47.....	86,988	540	·00621	28·34	99.....	267	111	·41560	1·74
48.....	86,448	561	·00649	27·51					
49.....	85,887	578	·00673	26·69	100.....	156	69	·44196	1·62
					101.....	87	41	·46932	1·51
50.....	85,309	596	·00699	25·87	102.....	46	23	·49768	1·40
51.....	84,713	621	·00733	25·05	103.....	23	12	·52705	1·30
52.....	84,092	658	·00783	24·23	104.....	11	6	·55742	1·18
53.....	83,434	708	·00849	23·42					
54.....	82,726	767	·00927	22·61	105.....	5	3	·58879	1·14
					106.....	2	1	·62116	1·06
55.....	81,959	832	·01015	21·82	107.....	1	1	·65453	·97
56.....	81,127	903	·01113	21·04					

TABLE 3. Probabilities of dying within one year, (A) Males, (B) Females, for Maritime and Prairie Provinces, based on population, 1931 and deaths, 1930-32

MARITIME PROVINCES

Age x	(A) Males			(B) Females		
	Prince Edward Island	Nova Scotia	New Brunswick	Prince Edward Island	Nova Scotia	New Brunswick
7	·00189	·00198	·00210	·00159	·00148	·00166
12	·00071	·00139	·00162	·00099	·00150	·00140
17	·00305	·00307	·00287	·00293	·00298	·00245
22	·00264	·00423	·00410	·00422	·00429	·00460
27	·00350	·00468	·00394	·00448	·00535	·00475
32	·00301	·00417	·00427	·00531	·00473	·00465
37	·00412	·00528	·00434	·00529	·00525	·00617
42	·00381	·00605	·00497	·00501	·00606	·00555
47	·00631	·00722	·00695	·00610	·00698	·00734
52	·00562	·01186	·00961	·00604	·00934	·00971
57	·01064	·01518	·01388	·01104	·01293	·01442
62	·01740	·01994	·02125	·01405	·01970	·01968
67	·02851	·03309	·03618	·02162	·02766	·03113
72	·04981	·04904	·05235	·03769	·04607	·04488
77	·06248	·07855	·08286	·05393	·06855	·07749
82	·09929	·12526	·14319	·09220	·10691	·13102
87	·16716	·18838	·16987	·13783	·16441	·17102
92	·27672	·24701	·28808	·24066	·22397	·24525

PRAIRIE PROVINCES

Age x	(A) Males			(B) Females		
	Manitoba	Saskatchewan	Alberta	Manitoba	Saskatchewan	Alberta
7	·00160	·00156	·00205	·00128	·00123	·00167
12	·00152	·00124	·00158	·00116	·00119	·00143
17	·00198	·00200	·00260	·00154	·00160	·00225
22	·00285	·00235	·00270	·00261	·00226	·00282
27	·00291	·00248	·00278	·00311	·00254	·00316
32	·00285	·00213	·00291	·00333	·00328	·00342
37	·00373	·00299	·00356	·00394	·00358	·00419
42	·00441	·00386	·00439	·00497	·00447	·00486
47	·00663	·00494	·00642	·00538	·00512	·00540
52	·00910	·00752	·00913	·00861	·00784	·00802
57	·01495	·01270	·01302	·01196	·01115	·01182
62	·02260	·01761	·01990	·01758	·01553	·01781
67	·03061	·03040	·03387	·02872	·02714	·02866
72	·05151	·04860	·05484	·04262	·04649	·04929
77	·08515	·07840	·08077	·07782	·06833	·07158
82	·12796	·12845	·13335	·12029	·11619	·12518
87	·18051	·17449	·19643	·15147	·16531	·18798
92	·28544	·24445	·30737	·20679	·24197	·29476

TABLE 4. Probabilities of dying within five years, (A) Males, (B) Females, Canada and regional divisions, based on population, 1931 and deaths, 1930-32

Age x	Canada	Maritime Provinces	Quebec	Ontario	Prairie Provinces	British Columbia
			(A) MALES			
5	·01081	·01016	·01362	·00954	·00870	·01185
10	·00806	·00776	·00909	·00766	·00737	·00842
15	·01249	·01459	·01403	·01156	·01064	·01404
20	·01635	·01984	·01897	·01495	·01286	·01995
25	·01685	·02111	·01839	·01626	·01331	·02066
30	·01769	·02068	·02038	·01715	·01321	·02112
35	·02164	·02364	·02566	·02106	·01674	·02437
40	·02688	·02708	·03262	·02716	·02102	·02799
45	·03564	·03519	·04069	·03688	·02926	·03721
50	·05208	·05105	·05938	·05368	·04244	·05453
55	·07543	·06953	·08165	·07897	·06568	·07614
60	·11012	·09899	·11994	·11537	·09698	·10629
65	·16709	·15752	·17841	·17336	·14965	·15884
70	·25144	·22948	·26570	·26016	·23359	·23730
75	·37447	·33924	·38919	·39058	·35006	·35353
80	·52035	·49485	·52666	·53430	·49953	·51571
85	·67324	·63124	·69028	·69502	·63851	·64784
90	·81286	·78464	·81339	·83689	·80750	·80791
95	·91645	·92200	·90000	·93274	·94818	·94653
100	·96825	·98876	·95238	·97369	–	–
			(B) FEMALES			
5	·00895	·00830	·01223	·00681	·00714	·01023
10	·00763	·00734	·00986	·00622	·00635	·00924
15	·01169	·01375	·01558	·00934	·00890	·01225
20	·01628	·02157	·02046	·01358	·01249	·01537
25	·01899	·02459	·02446	·01552	·01452	·01897
30	·02046	·02398	·02691	·01722	·01662	·01799
35	·02355	·02743	·02980	·02124	·01941	·02006
40	·02705	·02889	·03508	·02435	·02326	·02281
45	·03371	·03477	·04150	·03308	·02688	·03039
50	·04560	·04545	·05139	·04616	·04004	·03927
55	·06664	·06501	·07293	·06842	·05701	·06001
60	·09769	·09259	·11054	·09772	·08326	·09167
65	·14731	·13511	·16068	·14957	·13412	·13250
70	·22603	·20552	·24613	·22945	·21039	·19622
75	·35027	·30781	·36627	·36746	·31980	·32081
80	·49586	·45099	·51895	·51144	·47096	·43780
85	·64465	·59203	·68319	·66040	·59769	·62495
90	·77976	·73443	·80052	·81646	·74456	·77905
95	·88579	·86183	·88120	·93807	·89016	·89896
100	·95420	·95019	·93407	–	·98010	·96795

TABLE 5. Comparison of Canadian Life Table No. 1 with most recent official tables of England and the United States

Age x	Probability of Dying within One year (q_x)			Age x	Probability of Dying within One year (q_x)		
	Canadian Life Table No. 1[1]	English Life Table No. 10[2]	United States Life Table 1930[3]		Canadian Life Table No. 1[1]	English Life Table No. 10[2]	United States Life Table 1930[3]
			(A) MALES				
5	·00262	·00343	·00266	48	·00770	·00990	·01122
6	·00239	·00260	·00227	49	·00833	·01057	·01198
7	·00216	·00218	·00196				
8	·00194	·00185	·00172	50	·00903	·01128	·01278
9	·00175	·00161	·00155	51	·00979	·01206	·01365
				52	·01060	·01295	·01459
10	·00160	·00146	·00147	53	·01144	·01393	·01566
11	·00152	·00139	·00149	54	·01233	·01499	·01687
12	·00152	·00141	·00157				
13	·00162	·00151	·00171	55	·01329	·01614	·01819
14	·00182	·00170	·00190	56	·01433	·01744	·01966
				57	·01549	·01890	·02125
15	·00207	·00197	·00213	58	·01671	·02050	·02290
16	·00232	·00227	·00241	59	·01798	·02224	·02461
17	·00254	·00259	·00266				
18	·00272	·00284	·00286	60	·01938	·02415	·02644
19	·00291	·00302	·00301	61	·02096	·02630	·02838
				62	·02282	·02875	·03052
20	·00308	·00316	·00318	63	·02492	·03150	·03297
21	·00323	·00325	·00338	64	·02722	·03455	·03568
22	·00334	·00330	·00353				
23	·00340	·00334	·00361	65	·02975	·03791	·03865
24	·00341	·00333	·00366	66	·03256	·04162	·04196
				67	·03567	·04568	·04558
25	·00340	·00330	·00371	68	·03899	·05014	·04949
26	·00338	·00327	·00375	69	·04250	·05502	·05362
27	·00339	·00328	·00381				
28	·00339	·00331	·00390	70	·04634	·06035	·05796
29	·00340	·00335	·00402	71	·05067	·06615	·06252
				72	·05563	·07246	·06740
30	·00341	·00340	·00413	73	·06123	·07938	·07271
31	·00344	·00349	·00426	74	·06736	·08697	·07861
32	·00352	·00361	·00442				
33	·00364	·00378	·00463	75	·07403	·09519	·08526
34	·00380	·00398	·00486	76	·08124	·10397	·09274
				77	·08900	·11325	·10105
35	·00398	·00421	·00510	78	·09724	·12313	·11013
36	·00418	·00447	·00535	79	·10597	·13373	·11983
37	·00437	·00474	·00563				
38	·00456	·00502	·00597	80	·11527	·14500	·12997
39	·00474	·00531	·00636	81	·12521	·15687	·14043
				82	·13586	·16927	·15117
40	·00494	·00562	·00679	83	·14717	·18229	·16214
41	·00516	·00598	·00727	84	·15907	·19607	·17333
42	·00542	·00639	·00776				
43	·00569	·00687	·00825	85	·17167	·21048	·18468
44	·00597	·00741	·00874	86	·18506	·22544	·19618
				87	·19933	·24078	·20780
45	·00630	·00799	·00929	88	·21441	·25520	·21967
46	·00668	·00861	·00988	89	·23033	·27031	·23211
47	·00714	·00925	·01052	90	·24711	·28614	·24550

[1] Based on population of the nine provinces, 1931 and the deaths of 1930-32.
[2] Based on population of England and Wales, 1931 and deaths of 1930-32.
[3] Based on White population of Continental United States, 1930 and deaths of 1929-31.

TABLE 5. Comparison of Canadian Life Table No. 1 with most recent official tables of England and the United States—Con.

Age x	Probability of Dying within One year (q_x)			Age x	Probability of Dying within One year (q_x)		
	Canadian Life Table No. 1[1]	English Life Table No. 10[2]	United States Life Table 1930[3]		Canadian Life Table No. 1[1]	English Life Table No. 10[2]	United States Life Table 1930[3]
			(B) FEMALES				
5	·00232	·00298	·00220	48	·00718	·00714	·00844
6	·00197	·00233	·00182	49	·00759	·00763	·00899
7	·00171	·00192	·00153				
8	·00154	·00162	·00132	50	·00804	·00816	·00959
9	·00144	·00143	·00119	51	·00857	·00875	·01024
				52	·00920	·00941	·01097
10	·00140	·00134	·00113	53	·00992	·01013	·01179
11	·00142	·00133	·00113	54	·01073	·01090	·01272
12	·00149	·00140	·00119				
13	·00159	·00152	·00130	55	·01162	·01174	·01375
14	·00175	·00170	·00145	56	·01259	·01269	·01490
				57	·01364	·01377	·01618
15	·00195	·00191	·00164	58	·01475	·01497	·01756
16	·00216	·00215	·00186	59	·01589	·01627	·01904
17	·00235	·00235	·00209				
18	·00254	·00250	·00231	60	·01714	·01770	·02063
19	·00275	·00260	·00254	61	·01855	·01930	·02232
				62	·02017	·02110	·02419
20	·00295	·00268	·00277	63	·02196	·02307	·02632
21	·00313	·00275	·00302	64	·02390	·02520	·02866
22	·00330	·00282	·00322				
23	·00344	·00288	·00331	65	·02603	·02755	·03125
24	·00356	·00293	·00335	66	·02842	·03019	·03415
				67	·03114	·03321	·03736
25	·00367	·00298	·00339	68	·03406	·03660	·04086
26	·00376	·00301	·00342	69	·03714	·04035	·04464
27	·00385	·00306	·00346				
28	·00391	·00311	·00354	70	·04057	·04451	·04866
29	·00395	·00315	·00364	71	·04453	·04916	·05297
				72	·04920	·05435	·05760
30	·00398	·00319	·00374	73	·05464	·06024	·06267
31	·00402	·00325	·00383	74	·06071	·06686	·06829
32	·00409	·00332	·00394				
33	·00420	·00341	·00406	75	·06735	·07414	·07460
34	·00433	·00352	·00419	76	·07450	·08197	·08168
				77	·08211	·09025	·08956
35	·00448	·00364	·00433	78	·09016	·09903	·09823
36	·00463	·00377	·00447	79	·09867	·10848	·10756
37	·00477	·00392	·00463				
38	·00489	·00407	·00483	80	·10769	·11858	·11742
39	·00500	·00423	·00506	81	·11725	·12931	·12767
				82	·12736	·14065	·13821
40	·00512	·00440	·00532	83	·13800	·15275	·14895
41	·00526	·00461	·00561	84	·14915	·16571	·15984
42	·00544	·00486	·00593				
43	·00565	·00515	·00627	85	·16086	·17942	·17086
44	·00588	·00548	·00663	86	·17316	·19373	·18204
				87	·18610	·20844	·19345
45	·00615	·00584	·00702	88	·19965	·22178	·20528
46	·00645	·00624	·00746	89	·21381	·23583	·21786
47	·00680	·00668	·00793	90	·22860	·25061	·23151

TABLE 5. Comparison of Canadian Life Table No. 1 with most recent official tables of England and the United States—Con.

Age x	(A) Males			(B) Females		
	Canadian Life Table No. 1[1]	English Life Table No. 10[2]	United States Life Table 1930[3]	Canadian Life Table No. 1[1]	English Life Table No. 10[2]	United States Life Table 1930[3]
NUMBER ALIVE AT EACH AGE OUT OF 100,000 ALIVE AT AGE 5 (l_x)						
5	100,000	100,000	100,000	100,000	100,000	100,000
10	98,919	98,839	98,988	99,105	98,976	99,195
15	98,122	98,103	98,186	98,349	98,257	98,582
20	96,896	96,865	96,911	97,199	97,130	97,557
25	95,312	95,287	95,240	95,617	95,772	96,039
30	93,706	93,724	93,426	93,801	94,315	94,374
35	92,048	92,024	91,360	91,882	92,751	92,525
40	90,056	89,859	88,793	89,718	90,944	90,388
45	87,635	86,997	85,401	87,291	88,738	87,732
50	84,512	83,041	80,978	84,348	85,802	84,290
55	80,111	77,764	75,193	80,502	81,816	79,730
60	74,068	70,635	67,511	75,137	76,289	73,444
65	65,912	60,952	57,734	67,797	68,510	64,902
70	54,899	48,142	45,652	57,810	57,750	53,566
75	41,095	32,936	32,125	44,743	43,510	39,719
80	25,706	17,985	18,771	29,071	27,024	24,731
85	12,330	7,080	8,254	14,656	12,599	11,733
90	4,029	1,786	2,568	5,208	3,924	3,990
95	754	258	503	1,147	740	855
100	63	17	44	131	69	79
PROBABILITY OF LIVING 10 YEARS ($_{10}p_x$)						
5	·98122	·98103	·98186	·98349	·98257	·98582
10	·97955	·98003	·97901	·98077	·98135	·98349
15	·97136	·97130	·96999	·97222	·97471	·97421
20	·96708	·96757	·96404	·96504	·97101	·96737
25	·96575	·96576	·95927	·96094	·96846	·96341
30	·96105	·95876	·95041	·95647	·96426	·95776
35	·95206	·94537	·93477	·95003	·95673	·94820
40	·93844	·92412	·91199	·94015	·94346	·93254
45	·91414	·89387	·88048	·92223	·92199	·90879
50	·87642	·85060	·83369	·89080	·88913	·87133
55	·82276	·78381	·76781	·84218	·83738	·81402
60	·74120	·68156	·67621	·76939	·75699	·72934
65	·62348	·54036	·55643	·65996	·63509	·61198
70	·46824	·37358	·41120	·50287	·46795	·46169
75	·30004	·21497	·25693	·32756	·28956	·29540
80	·15673	·09933	·13681	·17915	·14520	·16132
85	·06115	·03638	·06088	·07826	·05875	·07287
90	·01564	·00957	·01698	·02515	·01767	·01990
95	·00265	–	·00217	·00523	·00323	·00125

TABLE 5. Comparison of Canadian Life Table No. 1 with most recent official tables of England and the United States—Con.

Age x	(A) Males			(B) Females		
	Canadian Life Table No. 1[1]	English Life Table No. 10[2]	United States Life Table 1930[3]	Canadian Life Table No. 1[1]	English Life Table No. 10[2]	United States Life Table 1930[3]
	COMPLETE EXPECTATION OF LIFE ($\mathring{e}_x$)					
5	62·30	60·11	59·38	63·17	63·24	62·17
10	57·96	55·79	54·96	58·72	58·87	57·65
15	53·41	51·19	50·39	54·15	54·28	53·00
20	49·05	46·81	46·02	49·76	49·88	48·52
25	44·83	42·54	41·78	45·54	45·55	44·25
30	40·55	38·21	37·54	41·38	41·22	39·99
35	36·23	33·87	33·33	37·19	36·87	35·73
40	31·98	29·62	29·22	33·02	32·55	31·52
45	27·79	25·51	25·28	28·87	28·30	27·39
50	23·72	21·60	21·51	24·79	24·18	23·41
55	19·88	17·89	17·97	20·84	20·23	19·60
60	16·29	14·43	14·72	17·15	16·50	16·05
65	12·98	11·30	11·77	13·72	13·07	12·81
70	10·06	8·62	9·20	10·63	10·02	9·98
75	7·57	6·43	7·02	7·98	7·45	7·56
80	5·61	4·74	5·26	5·92	5·46	5·63
85	4·10	3·50	3·99	4·38	4·00	4·24
90	2·97	2·63	3·03	3·24	2·98	3·17
95	2·14	1·97	2·19	2·40	2·22	2·24
100	1·53	1·48	1·49	1·77	1·65	1·48

TABLE 6. Recent rates of mortality in various countries[1]

1,000 q_x

Age x	Sweden 1921-30		Norway 1921-30		Denmark 1926-30		Finland 1921-20	
	Males	Females	Males	Females	Males	Females	Males	Females
5	2·32	2·28	2·24	1·79	1·68	1·57	4·57	4·25
10	1·73	1·59	1·67	1·45	1·18	0·87	3·24	2·90
15	2·32	2·55	2·53	3·01	1·63	1·54	3·56	4·89
20	4·78	3·75	5·81	4·67	2·88	2·74	10·18	6·37
25	4·52	4·24	6·04	5·03	2·49	3·02	8·18	6·48
30	4·43	4·30	5·67	4·72	2·91	3·29	7·11	6·36
35	4·55	4·44	5·29	4·94	3·23	4·06	7·48	6·26
40	5·30	5·16	5·75	5·29	4·50	4·84	9·17	7·63
45	6·66	6·03	7·30	6·43	5·62	5·63	12·56	8·09
50	8·78	8·22	9·12	8·15	8·30	8·52	15·28	10·30
55	12·67	11·23	12·48	10·80	12·08	11·65	23·61	12·52
60	18·43	15·72	18·36	14·65	19·77	17·86	32·04	19·95
65	28·35	24·21	26·72	23·09	29·89	27·45	44·25	31·34
70	43·73	39·08	42·07	36·23	46·60	45·99	64·06	50·03
75	70·24	65·20	65·57	57·87	76·71	77·64	93·51	79·22
80	114·22	104·94	105·23	97·45	126·79	126·99	129·25	129·59
85	180·60	171·87	162·01	147·97	192·93	185·87	166·26	174·72
90	274·45	256·23	247·62	222·63	278·59	266·80	–	–

[1] For England and Wales and the United States, see Table 5.

TABLE 6. Recent rates of mortality in various countries[1]—Con.

$1{,}000q_x$

Age x	Germany 1924–26		Netherlands 1921–30		France 1920–23		Switzerland 1921–30		Italy 1930–32	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
5.....	2·42	2·19	2·46	2·09	3·48	3·78	2·44	2·18	3·65	3·66
10.....	1·42	1·20	1·31	1·20	1·91	2·14	1·55	1·38	1·99	1·79
15.....	1·94	1·81	1·70	1·77	2·72	3·55	1·98	2·13	2·38	2·64
20.....	4·27	3·32	2·80	2·61	6·39	5·19	3·65	3·49	4·14	3·88
25.....	4·39	3·94	2·83	2·96	6·50	5·93	3·94	3·98	4·27	4·46
30.....	4·05	4·14	2·76	3·19	6·60	5·90	4·12	4·01	4·66	4·39
35.....	4·25	4·52	3·15	3·81	7·54	6·16	4·86	4·43	5·30	4·81
40.....	5·35	5·31	3·80	4·71	8·98	6·74	6·43	5·24	6·36	5·43
45.....	7·23	6·44	5·28	5·62	10·79	8·11	9·21	6·54	7·94	6·20
50.....	10·30	8·86	7·74	7·96	14·30	10·37	13·44	9·32	10·63	8·20
55.....	15·48	12·73	12·04	11·68	20·05	13·89	19·50	13·81	14·68	11·36
60	23·62	19·47	19·12	17·60	28·31	19·89	28·43	20·91	21·92	17·47
65.....	36·92	31·55	30·89	28·13	40·48	30·05	42·58	33·70	33·19	28·40
70.....	58·08	51·98	49·32	46·19	65·12	50·94	64·91	54·52	53·23	46·53
75.....	93·91	85·29	79·08	75·51	91·99	79·47	101·00	88·57	87·79	79·61
80.....	141·96	133·71	127·3	118·0	169·07	134·24	151·42	139·12	137·99	127·02
85.....	212·85	198·37	189·8	176·1	239·00	211·50	222·86	202·37	206·64	191·19
90.....	284·69	263·08	276·2	254·3	306·50	262·00	291·73	278·91	290·32	267·86

Age x	Japan 1921–25		India 1921–30		South Africa 1925–27		Australia 1920–22		Canada 1930–32	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
5.....	7·04	7·76	19·3	16·5	2·92	2·37	2·52	2·40	2·62	2·32
10.....	3·17	3·73	7·9	8·1	1·79	1·48	1·56	1·27	1·60	1·40
15.....	5·97	9·01	9·8	11·5	2·06	1·91	1·84	1·44	2·07	1·95
20.....	10·80	12·08	12·7	17·6	3·44	2·60	2·84	2·52	3·08	2·95
25.....	9·51	11·17	15·3	21·6	3·82	3·25	3·55	3·27	3·40	3·67
30.....	8·23	10·45	19·3	25·1	4·16	3·98	3·90	3·87	3·41	3·98
35.....	8·71	10·73	24·1	29·8	6·07	4·75	4·75	4·50	3·98	4·48
40.....	10·53	11·34	29·4	34·5	7·16	5·43	6·17	5·24	4·94	5·12
45.....	13·71	11·30	34·9	39·0	9·55	6·30	8·44	6·06	6·30	6·15
50.....	18·62	13·82	41·0	43·1	12·27	8·63	11·58	8·08	9·03	8·04
55.....	26·27	18·39	48·1	47·5	17·35	12·79	15·52	11·03	13·29	11·62
60.....	39·15	26·40	57·9	54·3	24·71	17·25	24·07	15·71	19·38	17·14
65.....	57·05	39·77	72·7	66·6	34·82	28·92	35·52	24·26	29·75	26·03
70.....	84·80	61·57	97·6	88·8	51·69	42·97	52·90	40·90	46·34	40·57
75.....	124·46	95·85	142·7	130·1	83·10	71·89	83·40	68·20	74·03	67·35
80.....	182·74	150·26	218·0	206·6	119·12	103·09	133·40	112·30	115·27	107·69
85.....	264·60	233·15	360·8	347·6	185·53	172·33	195·80	172·00	171·67	160·86
90.....	372·76	353·51	577·0	566·7	251·46	237·95	283·00	251·00	247·11	228·60

TABLE 7. Canadian Life Table No. 1, (A) Males, (B) Females, 3% commutation columns

Age x	(A) Males					
	D_x	N_x	S_x	C_x	M_x	R_x
5...	86,260·88	2,404,598·86	55,239,607·05	219·4209	16,224·0202	795,678·2622
6...	83,529·01	2,318,337·98	52,835,008·19	193·5158	16,004·5993	779,454·2420
7...	80,902·61	2,234,808·97	50,516,670·21	169·7230	15,811·0835	763,449·6427
8...	78,376·50	2,153,906·36	48,281,861·24	147·9184	15,641·3605	747,638·5592
9...	75,945·77	2,075,529·86	46,127,954·88	128·7283	15,493·4421	731,997·1987
10...	73,605·03	1,999,584·09	44,052,425·02	114·1426	15,364·7138	716,503·7566
11...	71,347·05	1,925,979·06	42,052,840·93	105·2070	15,250·5712	701,139·0428
12...	69,163·77	1,854,632·01	40,126,861·87	102·1427	15,145·3642	685,888·4716
13...	67,047·15	1,785,468·24	38,272,229·86	105·7789	15,043·2215	670,743·1074
14...	64,988·54	1,718,421·09	36,486,761·62	114·8933	14,937·4426	655,699·8859
15...	62,980·78	1,653,432·55	34,768,340·53	126·5029	14,822·5493	640,762·4433
16...	61,019·88	1,590,451·77	33,114,907·98	137·3387	14,696·0464	625,939·8940
17...	59,105·27	1,529,431·90	31,524,456·21	145·6739	14,558·7077	611,243·8476
18...	57,238·08	1,470,326·63	29,995,024·31	151·1258	14,413·0338	596,685·1399
19...	55,419·83	1,413,088·55	28,524,697·68	156·6902	14,261·9080	582,272·1061
20...	53,648·97	1,357,668·72	27,111,609·13	160·1897	14,105·2178	568,010·1981
21...	51,926·19	1,304,019·75	25,753,940·41	162·8305	13,945·0281	553,904·9803
22...	50,250·94	1,252,093·56	24,449,920·66	163·1547	13,782·1976	539,959·9522
23...	48,624·17	1,201,842·62	23,197,827·10	160·3704	13,619·0429	526,177·7546
24...	47,047·56	1,153,218·45	21,995,984·48	155·6994	13,458·6725	512,558·7117
25...	45,521·54	1,106,170·89	20,842,766·03	150·2371	13,302·9731	499,100·0392
26...	44,045·44	1,060,649·35	19,736,595·14	144·5107	13,152·7360	485,797·0661
27...	42,618·05	1,016,603·91	18,675,945·79	140·3016	13,008·2253	472,644·3301
28...	41,236·44	973,985·86	17,659,341·88	135·7908	12,867·9237	459,636·1048
29...	39,899·59	932,749·42	16,685,356·02	131·8358	12,732·1329	446,768·1811
30...	38,605·63	892,849·83	15,752,606·60	127·9959	12,600·2971	434,036·0482
31...	37,353·20	854,244·20	14,859,756·77	124·6562	12,472·3012	421,435·7511
32...	36,140·59	816,891·00	14,005,512·57	123·6646	12,347·6450	408,963·4499
33...	34,964·28	780,750·41	13,188,621·57	123·7232	12,223·9804	396,615·8049
34...	33,822·18	745,786·13	12,407,871·16	124·7396	12,100·2572	384,391·8245
35...	32,712·33	711,963·95	11,662,085·03	126·2819	11,975·5176	372,291·5673
36...	31,633·26	679,251·62	10,950,121·08	128·2985	11,849·2357	360,316·0497
37...	30,583·61	647,618·36	10,270,869·46	129·7652	11,720·9372	348,466·8140
38...	29,563·06	617,034·75	9,623,251·10	131·0377	11,591·1720	336,745·8768
39...	28,570·96	587,471·69	9,006,216·35	131·5129	11,460·1343	325,154·7048
40...	27,607·28	558,900·73	8,418,744·66	132·4445	11,328·6214	313,694·5705
41...	26,670·74	531,293·45	7,859,843·93	133·4992	11,196·1769	302,365·9491
42...	25,760·43	504,622·71	7,328,550·48	135·5022	11,062·6777	291,169·7722
43...	24,874·62	478,862·28	6,823,927·77	137·5478	10,927·1755	280,107·0945
44...	24,012·57	453,987·66	6,345,065·49	139·0947	10,789·6277	269,179·9190
45...	23,174·08	429,975·09	5,891,077·83	141·7186	10,650·5330	258,390·2913
46...	22,357·39	406,801·01	5,461,102·74	145·0686	10,508·8144	247,739·7583
47...	21,561·13	384,443·62	5,054,301·73	149·5553	10,363·7458	237,230·9439
48...	20,783·58	362,882·49	4,669,858·11	155·3021	10,214·1905	226,867·1981
49...	20,022·93	342,098·91	4,306,975·62	161·9560	10,058·8884	216,653·0076
50...	19,277·79	322,075·98	3,964,876·71	168·9764	9,896·9324	206,594·1192
51...	18,547·32	302,798·19	3,642,800·73	176·3105	9,727·9560	196,697·1868
52...	17,830·80	284,250·87	3,340,002·54	183·4915	9,551·6455	186,969·2308
53...	17,127·96	266,420·07	3,055,751·67	190·3073	9,368·1540	177,417·5853
54...	16,438·78	249,292·11	2,789,331·60	196·7672	9,177·8467	168,049·4313

TABLE 7. Canadian Life Table No. 1, (A) Males, (B) Females, 3% commutation columns—Con.

Age x	(A) Males					
	D_x	N_x	S_x	C_x	M_x	R_x
55...	15,763·22	232,853·33	2,540,039·49	203·4534	8,981·0795	158,871·5846
56...	15,100·64	217,090·11	2,307,186·16	210·1397	8,777·6261	149,890·5051
57...	14,450·67	201,989·47	2,090,096·05	217·3443	8,567·4864	141,112·8790
58...	13,812·44	187,538·80	1,888,106·58	224·1258	8,350·1421	132,545·3926
59...	13,186·01	173,726·36	1,700,567·78	230·1581	8,126·0163	124,195·2505
60...	12,571·79	160,540·35	1,526,841·42	236·4728	7,895·8582	116,069·2342
61...	11,969·15	147,968·56	1,366,301·07	243·5044	7,659·3854	108,173·3760
62...	11,377·03	135,999·41	1,218,332·51	252·1003	7,415·8810	100,513·9906
63...	10,793·56	124,622·38	1,082,333·10	261·1954	7,163·7807	93,098·1096
64...	10,217·99	113,828·82	957,710·72	269·9860	6,902·5853	85,934·3289
65...	9,650·390	103,610·829	843,881·899	278·7538	6,632·5993	79,031·7436
66...	9,090·557	93,960·439	740,271·070	287·3338	6,353·8455	72,399·1443
67...	8,538·450	84,869·882	646,310·631	295·7134	6,066·5117	66,045·2988
68...	7,994·044	76,331·432	561,440·749	302·5807	5,770·7983	59,978·7871
69...	7,458·627	68,337·388	485,109·317	307·7867	5,468·2176	54,207·9888
70...	6,933·599	60,878·761	416,771·929	311·9422	5,160·4309	48,739·7712
71...	6,419·707	53,945·162	355,893·168	315·8327	4,848·4887	43,579·3403
72...	5,916·892	47,525·455	301,948·006	319·5786	4,532·6560	38,730·8516
73...	5,424·978	41,608·563	254,422·551	322·5018	4,213·0774	34,198·1956
74...	4,944·467	36,183·585	212,813·988	323·3494	3,890·5756	29,985·1182
75...	4,477·103	31,239·118	176,630·403	321·7586	3,567·2262	26,094·5426
76...	4,024·944	26,762·015	145,391·285	317·4188	3,245·4676	22,527·3164
77...	3,590·294	22,737·071	118,629·270	310·2673	2,928·0488	19,281·8488
78...	3,175·455	19,146·777	95,892·199	299·7785	2,617·7815	16,353·8000
79...	2,783·187	15,971·322	76,745·422	286·3482	2,318·0030	13,736·0185
80...	2,415·775	13,188·135	60,774·100	270·3438	2,031·6548	11,418·0155
81...	2,075·069	10,772·360	47,585·965	252·2828	1,761·3110	9,386·3607
82...	1,762·347	8,697·291	36,813·605	232·4644	1,509·0282	7,625·0497
83...	1,478·553	6,934·944	28,116·314	211·2485	1,276·5638	6,116·0215
84...	1,224·239	5,456·391	21,181·3697	189·0447	1,065·3153	4,839·4577
85...	999·5373	4,232·1517	15,724·9787	166·6171	876·2706	3,774·1424
86...	803·8074	3,232·6144	11,492·8270	144·4186	709·6535	2,897·8718
87...	635·9769	2,428·8070	8,260·2126	123·0752	565·2349	2,188·2183
88...	494·3781	1,792·8301	5,831·4056	102·9246	442·1597	1,622·9834
89...	377·0541	1,298·4520	4,038·5755	84·33292	339·23514	1,180·82372
90...	281·7391	921·3979	2,740·1235	67·61949	254·90222	841·58858
91...	205·9136	639·6588	1,818·7256	52·92865	187·28273	586·68636
92...	146·9874	433·7452	1,179·0668	40·44410	134·35408	399·40363
93...	102·2621	286·7578	745·3216	30·07089	93·90998	265·04955
94...	69·21274	184·49572	458·56375	21·71532	63·83909	171·13957
95...	45·48152	115·28298	274·06803	15·22649	42·12377	107·30048
96...	28·93033	69·80146	158·78505	10·29124	26·89728	65·17671
97...	17·79646	40·87113	88·98359	6·73460	16·60604	38·27943
98...	10·54351	23·07467	48·11246	4·23391	9·87144	21·67339
99...	6·00251	12·53116	25·03779	2·54961	5·63753	11·80195
100...	3·27807	6·52865	12·50663	1·46500	3·08792	6·16442
101...	1·71759	3·25058	5·97798	·83378	1·62292	3·07650
102...	·83378	1·53299	2·72740	·42856	·78914	1·45358
103...	·38094	·69921	1·19441	·18492	·36058	·66444
104...	·18492	·31827	·49520	·08977	·17566	·30386
105...	·08977	·13335	·17693	·04358	·08589	·12820
106...	·04358	·04358	·04358	·04231	·04231	·04231

TABLE 7. Canadian Life Table No. 1 (A) Males, (B) Females, 3% commutation columns—Con.

Age x	(B) Females					
	D_x	N_x	S_x	C_x	M_x	R_x
5...	86,260·88	2,415,938·94	55,892,033·93	194·2963	15,893·7270	788,015·6145
6...	83,554·13	2,329,678·06	53,476,094·99	160·1790	15,699·4307	772,121·8875
7...	80,960·34	2,246,123·93	51,146,416·93	134·1996	15,539·2517	756,422·4568
8...	78,468·07	2,165,163·59	48,900,293·00	117·2618	15,405·0521	740,883·2051
9...	76,065·33	2,086,695·52	46,735,129·41	106·4054	15,287·7903	725,478·1530
10...	73,743·43	2,010,630·19	44,648,433·89	100·4166	15,181·3849	710,190·3627
11...	71,495·14	1,936,886·76	42,637,803·70	98·8946	15,080·9683	695,008·9778
12...	69,313·87	1,865,391·62	40,700,916·94	100·0998	14,982·0737	679,928·0095
13...	67,194·92	1,796,077·75	38,835,525·32	103·7955	14,881·9739	664,945·9358
14...	65,133·99	1,728,882·83	37,039,447·57	110·4003	14,778·1784	650,063·9619
15...	63,126·48	1,663,748·84	35,310,564·74	119·6481	14,667·7781	635,285·7835
16...	61,168·20	1,600,622·36	33,646,815·90	128·2635	14,548·1300	620,618·0054
17...	59,258·34	1,539,454·16	32,046,193·54	135·1008	14,419·8665	606,069·8754
18...	57,397·26	1,480,195·82	30,506,739·38	141·4309	14,284·7657	591,650·0089
19...	55,584·07	1,422,798·56	29,026,543·56	148·3851	14,143·3348	577,365·2432
20...	53,816·73	1,367,214·49	27,603,745·00	154·2766	13,994·9497	563,221·9084
21...	52,094·98	1,313,397·76	26,236,530·51	158·1334	13,840·6731	549,226·9587
22...	50,419·51	1,261,302·78	24,923,132·75	161·6347	13,682·5397	535,386·2856
23...	48,789·35	1,210,883·27	23,661,829·97	162·8301	13,520·9050	521,703·7459
24...	47,205·47	1,162,093·92	22,450,946·70	163·3411	13,358·0749	508,182·8409
25...	45,667·21	1,114,888·45	21,288,852·78	162·7569	13,194·7338	494,824·7660
26...	44,174·34	1,069,221·24	20,173,964·33	161·1677	13,031·9769	481,630·0322
27...	42,726·54	1,025,046·90	19,104,743·09	159·5330	12,870·8092	468,598·0553
28...	41,322·55	982,320·36	18,079,696·19	157·0082	12,711·2762	455,727·2461
29...	39,961·97	940,997·81	17,097,375·83	153·2591	12,554·2680	443,015·9699
30...	38,644·77	901,035·84	16,156,378·02	149·1952	12,401·0089	430,461·7019
31...	37,370·00	862,391·07	15,255,342·18	146·0147	12,251·8137	418,060·6930
32...	36,135·54	825,021·07	14,392,951·11	143·6470	12,105·7990	405,808·8793
33...	34,939·40	788,885·53	13,567,930·04	142·3915	11,962·1520	393,703·0803
34...	33,779·36	753,946·13	12,779,044·51	142·1534	11,819·7605	381,740·9283
35...	32,653·34	720,166·77	12,025,098·38	142·1534	11,677·6071	369,921·1678
36...	31,560·12	687,513·43	11,304,931·61	142·0328	11,535·4537	358,243·5607
37...	30,498·86	655,953·31	10,617,418·18	141·1481	11,393·4209	346,708·1070
38...	29,469·39	625,454·45	9,961,464·87	139·8788	11,252·2728	335,314·6861
39...	28,471·18	595,985·06	9,336,010·42	138·2571	11,112·3940	324,062·4133
40...	27,503·67	567,513·88	8,740,025·36	136·6113	10,974·1369	312,950·0193
41...	26,565·98	540,010·21	8,172,511·48	135·8108	10,837·5256	301,975·8824
42...	25,656·40	513,444·23	7,632,501·27	135·5022	10,701·7148	291,138·3568
43...	24,773·63	487,787·83	7,119,057·04	135·9135	10,566·2126	280,436·6420
44...	23,916·15	463,014·20	6,631,269·21	136·4503	10,430·2991	269,870·4294
45...	23,083·11	439,098·05	6,168,255·01	137·8675	10,293·8488	259,440·1303
46...	22,272·92	416,014·94	5,729,156·96	139·5849	10,155·9813	249.146·2815
47...	21,484·61	393,742·02	5,313,142·02	141·8113	10,016·3964	238,990·3002
48...	20,717·03	372,257·41	4,919,400·00	144·4944	9,874·5851	228,973·9038
49...	19,969·13	351,540·38	4,547,142·59	147·1291	9,730·0907	219,099·3187
50...	19,240·38	331,571·25	4,195,602·21	150·1520	9,582·9616	209,369·2280
51...	18,529·82	312,330·87	3,864,030·96	154·1642	9,432·8096	199,786·2664
52...	17,835·96	293,801·05	3,551,700·09	159·2765	9,278·6454	190,353·4568
53...	17,157·19	275,965·09	3,257,899·04	165·1762	9,119·3689	181,074·8114
54...	16,492·29	258,807·90	2,981,933·95	171·7777	8,954·1927	171,955·4425

TABLE 7. Canadian Life Table No. 1, (A) Males, (B) Females, 3% commutation columns—Con.

Age x	(B) Females					
	D_x	N_x	S_x	C_x	M_x	R_x
55...	15,840·15	242,315·61	2,723,126·05	178·6187	8,782·4150	163,001·2498
56...	15,200·17	226,475·46	2,480,810·44	185·8429	8,603·7963	154,218·8348
57...	14,571·60	211,275·29	2,254,334·98	193·0349	8,417·9534	145,615·0385
58...	13,954·15	196,703·69	2,043,059·69	199·8251	8,224·9185	137,197·0851
59...	13,347·90	182,749·54	1,846,356·00	205·8862	8,025·0934	128,972·1666
60...	12,753·24	169,401·64	1,663,606·46	212·2488	7,819·2072	120,947·0732
61...	12,169·53	156,648·40	1,494,204·82	219·1859	7,606·9584	113,127·8660
62...	11,595·90	144,478·87	1,337,556·42	227·0922	7,387·7725	105,520·9076
63...	11,031·06	132,882·97	1,193,077·55	235·2568	7,160·6803	98,133·1351
64...	10,474·51	121,851·91	1,060,194·58	243·0460	6,925·4235	90,972·4548
65...	9,926·379	111,377·398	938,342·665	250·8926	6,682·3775	84,047·0313
66...	9,386·369	101,451·019	826,965·267	259·0420	6,431·4849	77,364·6538
67...	8,853·937	92,064·650	725,514·248	267·7097	6,172·4429	70,933·1689
68...	8,328·346	83,210·713	633,449·598	275·3927	5,904·7332	64,760·7260
69...	7,810·380	74,882·367	550,238·885	281·6431	5,629·3405	58,855·9928
70...	7,301·250	67,071·987	475,356·518	287·5411	5,347·6974	53,226·6523
71...	6,801·052	59,770·737	408,284·531	294·0470	5,060·1563	47,878·9549
72...	6,308·915	52,969·685	348,513·794	301·3170	4,766·1093	42,818·7986
73...	5,823·844	46,660·770	295,544·109	308·9240	4,464·7923	38,052·6893
74...	5,345·293	40,836·926	248,883·339	315·0695	4,155·8683	33,587·8970
75...	4,874·536	35,491·633	208,046·413	318·6912	3,840·7988	29,432·0287
76...	4,413·868	30,617·097	172,554·780	319·2673	3,522·1076	25,591·2299
77...	3,966·041	26,203·229	141,937·683	316·1497	3,202·8403	22,069·1223
78...	3,534·376	22,237·188	115,734·454	309·3613	2,886·6906	18,866·2820
79...	3,122·071	18,702·812	93,497·266	299·1291	2,577·3293	15,979·5914
80...	2,732·008	15,580·741	74,794·454	285·6721	2,278·2002	13,402·2621
81...	2,366·763	12,848·733	59,213·713	269·3792	1,992·5281	11,124·0619
82...	2,028·449	10,481·970	46,364·980	250·7829	1,723·1489	9,131·5338
83...	1,718·585	8,453·521	35,883·010	230·2859	1,472·3660	7,408·3849
84...	1,438·243	6,734·936	27,429·489	208·2572	1,242·0801	5,936·0189
85...	1,188·096	5,296·693	20,694·553	185·5848	1,033·8229	4,693·9388
86...	967·9060	4,108·5971	15,397·8599	162·7575	848·2381	3,660·1159
87...	776·9570	3,140·6911	11,289·2628	140·3607	685·4806	2,811·8778
88...	613·9666	2,363·7341	8,148·5717	118·9863	545·1199	2,126·3972
89...	477·0977	1,749·7675	5,784·8376	99·01775	426·13360	1,581·27726
90...	364·1839	1,272·6698	4,035·0701	80·85824	327·11585	1,155·14366
91...	272·7183	908·4859	2,762·4003	64·59537	246·25761	828·02781
92...	200·1797	635·7676	1,853·9144	50·55513	181·66224	581·77020
93...	143·7941	435·5879	1,218·1468	38·64482	131·10711	400·10796
75...	100·9611	291·7938	782·5589	28·83311	92·46229	269·00085
95...	69·18741	190·83266	490·76510	20·96570	63·62918	176·53856
96...	46·20654	121·64525	299·93244	14·83986	42·66348	112·90938
97...	30·02086	75·43871	178·28719	10·21230	27·82362	70·24590
98...	18·93416	45·41785	102·84848	6·80642	17·61132	42·42228
99...	11·57627	26·48369	57·43063	4·42279	10·80490	24·81096
100...	6·81630	14·90742	30·94694	2·72794	6·38211	14·00606
101...	3·88983	8·09112	16·03952	1·66756	3·65417	7·62395
102...	2·10898	4·20129	7·94840	·95235	1·98661	3·96978
103...	1·09520	2·09231	3·74711	·50854	1·03426	1·98317
104...	·55477	·99711	1·65480	·26930	·52572	·94891
105...	·26930	·44234	·65769	·13073	·25642	·42319
106...	·13073	·17304	·21535	·08461	·12569	·16677
107...	·04231	·04231	·04231	·04108	·04108	·04108

TABLE 8. Canadian Life Table No. 1, (A) Males, (B) Females, annuity values; single and annual life assurance premiums

Age x	Life Annuity Due a_x	20-Year Annuity Due $a_{x:\overline{20}\|}$	Single Premium for $1,000.00			
			Whole-Life Assurance $1{,}000\ A_x$	20-Year Term Assurance $1{,}000\ A^1_{x:\overline{20}\|}$	20-Year Pure Endowment $1{,}000\ A_{x:\overline{20}\|}^{\frac{1}{}}$	20-Year Endowment Assurance $1{,}000\ A_{x:\overline{20}\|}$
			(A) MALES			
5.....	27·876	15·052	188.08	33.86	527.72	561.58
10.....	27·166	15·036	208.75	37.56	524.50	562.05
15.....	26·253	14·949	235.35	45.20	519.40	564.61
20.....	25·307	14·889	262.92	51.75	514.59	566.35
25.....	24·300	14·854	292.23	58.27	509.08	567.35
30.....	23·127	14·785	326.39	70.03	499.35	569.38
35.....	21·764	14·646	366.09	91.54	481.87	573.41
40.....	20·245	14·430	410.35	124.34	455.38	579.72
45.....	18·554	14·083	459.59	173.38	416.43	589.81
50.....	16·707	13·549	513.39	245.70	359.67	605.37
55.....	14·772	12·790	569.75	343.45	284.02	627.47
60.....	12·770	11·721	628.06	466.46	192.16	658.62
65.....	10·736	10·298	687.29	596.49	103.57	700.06
70.....	8·780	8·647	744.26	707.50	40.63	748.14
75.....	6·978	6·952	796.77	787.36	10.16	797.52
80.....	5·459	5·457	841.00	839.72	1.36	841.07
85.....	4·234	4·234	876.68	876.59	0.09	876.68
90.....	3·270	–	904.75	–	–	–
95.....	2·535	–	926.17	–	–	–
100.....	1·992	–	941.99	–	–	–
			(B) FEMALES			
5.....	28·007	15·083	184.25	31.29	529.41	560.70
10.....	27·265	15·047	205.87	37.70	524.04	561.75
15.....	26·356	14·948	232.35	47.37	517.27	564.64
20.....	25·404	14·860	260.05	56.13	511.06	567.19
25.....	24·413	14·798	288.93	63.52	505.46	568.99
30.....	23·316	14·736	320.89	72.92	497.88	570.80
35.....	22·055	14·634	357.62	88.66	485.10	573.77
40.....	20·634	14·475	399.00	114.70	463.69	578.40
45.....	19·022	14·197	445.94	156.45	430.03	586.48
50.....	17·233	13·747	498.06	220.11	379.48	599.59
55.....	15·298	13·057	554.43	311.96	307.73	619.69
60.....	13·283	12·061	613.12	434.48	214.22	648.70
65.....	11·220	10·687	673.19	569.04	119.69	688.74
70.....	9·186	9·012	732.44	687.63	49.88	737.51
75.....	7·281	7·242	787.93	774.88	14.19	789.07
80.....	5·703	5·698	833.89	831.56	2.50	834.05
85.....	4·458	4·458	870.15	869.94	0.23	870.16
90.....	3·495	–	898.22	–	–	–
95.....	2·758	–	919.66	–	–	–
100.....	2·187	–	936.30	–	–	–

TABLE 8. Canadian Life Table No. 1, (A) Males, (B) Females, annuity values; single and annual life assurance premiums—Con.

Annual Premium for $1,000.00

Age x	Whole-Life Assurance $1{,}000\ P_x$	20-Payment Life Assurance $1{,}000_{20}\ P_x$	20-Year Term Assurance $1{,}000\ P^{1}_{x:\overline{20}\rceil}$	20-Year Pure Endowment $1{,}000\ P_{x:\frac{1}{20}\rceil}$	20-Year Endowment Assurance $1{,}000\ P_{x:\overline{20}\rceil}$
			(A) MALES		
5	6.75	12.50	2.25	35.06	37.31
10	7.68	13.88	2.50	34.88	37.38
15	8.96	15.74	3.02	34.75	37.77
20	10.39	17.66	3.48	34.56	38.04
25	12.03	19.67	3.92	34.27	38.19
30	14.11	22.08	4.74	33.77	38.51
35	16.82	25.00	6.25	32.90	39.15
40	20.27	28.44	8.62	31.56	40.18
45	24.77	32.63	12.31	29.57	41.88
50	30.73	37.89	18.13	26.55	44.68
55	38.57	44.55	26.85	22.21	49.06
60	49.18	53.58	39.80	16.39	56.19
65	64.01	66.74	57.92	10.06	67.98
70	84.77	86.07	81.82	4.70	86.52
75	114.19	114.61	113.26	1.46	114.72
80	154.05	154.13	153.89	0.25	154.14
85	207.05	207.06	207.04	0.02	207.06
90	276.65	–	–	–	–
95	365.39	–	–	–	–
100	472.98	–	–	–	–
			(B) FEMALES		
5	6.58	12.22	2.07	35.10	37.17
10	7.55	13.68	2.51	34.83	37.33
15	8.82	15.54	3.17	34.61	37.77
20	10.24	17.50	3.78	34.39	38.17
25	11.83	19.52	4.29	34.16	38.45
30	13.76	21.78	4.95	33.79	38.74
35	16.21	24.44	6.06	33.15	39.21
40	19.34	27.56	7.92	32.03	39.96
45	23.44	31.41	11.02	30.29	41.31
50	28.90	36.23	16.01	27.60	43.62
55	36.24	42.46	23.89	23.57	47.46
60	46.16	50.83	36.02	17.76	53.78
65	60.00	62.99	53.25	11.20	64.45
70	79.73	81.27	76.30	5.53	81.84
75	108.22	108.80	107.00	1.96	108.96
80	146.22	146.36	145.95	0.44	146.39
85	195.18	195.20	195.15	0.05	195.20
90	257.03	–	–	–	–
95	333.43	–	–	–	–
100	428.12	–	–	–	–

TABLE 9. Life Tables, (A) Males, (B) Females, based on population and deaths of the Registration Area of 1921[1] in each of the years 1921 and 1931

Age x	(A) Males				Age x	(A) Males			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
				1921					
5.....	100,000	367	·00367	61·82	57.....	76,917	1,161	·01509	18·77
6.....	99,633	335	·00336	61·05	58.....	75,756	1,231	·01625	18·05
7.....	99,298	301	·00303	60·25	59.....	74,525	1,296	·01739	17·34
8.....	98,997	268	·00271	59·43					
9.....	98,729	239	·00242	58·59	60.....	73,229	1,364	·01862	16·63
					61.....	71,865	1,437	·02000	15·94
10.....	98,490	216	·00219	57·73	62.....	70,428	1,523	·02163	15·26
11.....	98,274	200	·00204	56·86	63.....	68,905	1,612	·02339	14·58
12.....	98,074	196	·00200	55·97	64.....	67,293	1,697	·02522	13·92
13.....	97,878	205	·00209	55·09					
14.....	97,673	225	·00230	54·20	65.....	65,596	1,791	·02730	13·27
					66.....	63,805	1,901	·02979	12·62
15.....	97,448	250	·00257	53·32	67.....	61,904	2,034	·03286	12·00
16.....	97,198	277	·00285	52·46	68.....	59,870	2,190	·03658	11·39
17.....	96,921	299	·00308	51·61	69.....	57,680	2,354	·04082	10·80
18.....	96,622	314	·00325	50·77					
19.....	96,308	327	·00340	49·93	70.....	55,326	2,517	·04550	10·24
					71.....	52,809	2,668	·05053	9·70
20.....	95,981	340	·00354	49·10	72.....	50,141	2,799	·05582	9·19
21.....	95,641	350	·00366	48·27	73.....	47,342	2,904	·06134	8·71
22.....	95,291	358	·00376	47·45	74.....	44,438	2,984	·06714	8·24
23.....	94,933	365	·00384	46·62					
24.....	94,568	370	·00391	45·80	75.....	41,454	3,038	·07329	7·80
					76.....	38,416	3,066	·07981	7·38
25.....	94,198	372	·00395	44·98	77.....	35,350	3,067	·08677	6·97
26.....	93,826	372	·00397	44·16	78.....	32,283	3,032	·09392	6·59
27.....	93,454	372	·00398	43·33	79.....	29,251	2,960	·10121	6·22
28.....	93,082	367	·00394	42·50					
29.....	92,715	357	·00385	41·67	80.....	26,291	2,867	·10904	5·87
					81.....	23,424	2,758	·11775	5·52
30.....	92,358	346	·00375	40·83	82.....	20,666	2,640	·12773	5·19
31.....	92,012	340	·00369	39·98	83.....	18,026	2,516	·13958	4·88
32.....	91,672	340	·00371	39·12	84.....	15,510	2,374	·15306	4·59
33.....	91,332	349	·00382	38·27					
34.....	90,983	363	·00399	37·41	85.....	13,136	2,197	·16726	4·33
					86.....	10,939	1,983	·18124	4·10
35.....	90,620	381	·00420	36·56	87.....	8,956	1,738	·19408	3·90
36.....	90,239	399	·00442	35·71	88.....	7,218	1,487	·20600	3·71
37.....	89,840	416	·00463	34·87	89.....	5,731	1,245	·21724	3·55
38.....	89,424	429	·00480	34·03					
39.....	88,995	441	·00495	33·19	90.....	4,486	1,023	·22800	3·39
					91.....	3,463	826	·23852	3·25
40.....	88,554	453	·00512	32·35	92.....	2,637	657	·24902	3·11
41.....	88,101	467	·00530	31·52	93.....	1,980	514	·25972	2·97
42.....	87,634	485	·00554	30·68	94.....	1,466	397	·27085	2·84
43.....	87,149	507	·00582	29·85					
44.....	86,642	531	·00613	29·02	95.....	1,069	302	·28263	2·71
					96.....	767	226	·29529	2·58
45.....	86,111	558	·00648	28·20	97.....	541	167	·30905	2·44
46.....	85,553	586	·00685	27·38	98.....	374	121	·32413	2·31
47.....	84,967	617	·00726	26·56	99.....	253	86	·34076	2·18
48.....	84,350	646	·00766	25·76					
49.....	83,704	674	·00805	24·95	100.....	167	60	·35916	2·06
					101.....	107	41	·37955	1·93
50.....	83,030	705	·00849	24·15	102.....	66	27	·40217	1·80
51.....	82,325	743	·00903	23·35	103.....	39	17	·42722	1·67
52.....	81,582	793	·00972	22·56	104.....	22	10	·45495	1·55
53.....	80,789	856	·01059	21·78					
54.....	79,933	928	·01161	21·00	105.....	12	6	·48556	1·42
					106.....	6	3	·51929	1·30
55.....	79,005	1,005	·01272	20·24	107.....	3	2	·55636	1·15
56.....	78,000	1,083	·01389	19·50	108.....	1	1	·59700	0·98

[1] Canada excluding Quebec, Yukon and the Northwest Territories.

TABLE 9. Life Tables, (A) Males, (B) Females, based on population and deaths of the Registration Area of 1921[1] in each of the years 1921 and 1931—Con.

Age x	(B) Females				Age x	(B) Females			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
				1921					
5.....	100,000	325	·00325	62·23	57.....	76,569	1,027	·01341	19·40
6.....	99,675	291	·00292	61·44	58.....	75,542	1,083	·01433	18·66
7.....	99,384	260	·00262	60·61	59.....	74,459	1,138	·01528	17·92
8.....	99,124	234	·00236	59·77					
9.....	98,890	213	·00215	58·91	60.....	73,321	1,202	·01639	17·19
					61.....	72,119	1,280	·01775	16·47
10.....	98,677	196	·00199	58·04	62.....	70,839	1,379	·01947	15·76
11.....	98,481	187	·00190	57·15	63.....	69,460	1,499	·02158	15·06
12.....	98,294	185	·00188	56·26	64.....	67,961	1,631	·02400	14·38
13.....	98,109	190	·00194	55·37					
14.....	97,919	204	·00208	54·47	65.....	66,330	1,771	·02670	13·72
					66.....	64,559	1,914	·02964	13·09
15.....	97,715	222	·00227	53·58	67.....	62,645	2,054	·03278	12·47
16.....	97,493	243	·00249	52·71	68.....	60,591	2,187	·03610	11·88
17.....	97,250	261	·00268	51·84	69.....	58,404	2,313	·03960	11·30
18.....	96,989	280	·00289	50·97					
19.....	96,709	301	·00311	50·12	70.....	56,091	2,432	·04336	10·75
					71.....	53,659	2,543	·04740	10·21
20.....	96,408	322	·00334	49·27	72.....	51,116	2,646	·05177	9·69
21.....	96,086	341	·00355	48·44	73.....	48,470	2,734	·05641	9·20
22.....	95,745	356	·00372	47·61	74.....	45,736	2,803	·06129	8·72
23.....	95,389	367	·00385	46·78					
24.....	95,022	374	·00394	45·96	75.....	42,933	2,855	·06651	8·25
					76.....	40,078	2,892	·07217	7·81
25.....	94,648	380	·00401	45·14	77.....	37,186	2,915	·07838	7·37
26.....	94,268	384	·00407	44·32	78.....	34,271	2,910	·08492	6·96
27.....	93,884	389	·00414	43·50	79.....	31,361	2,876	·09170	6·56
28.....	93,495	393	·00420	42·68					
29.....	93,102	396	·00425	41·86	80.....	28,485	2,822	·09908	6·17
					81.....	25,663	2,756	·10741	5·79
30.....	92,706	400	·00431	41·04	82.....	22,907	2,681	·11705	5·43
31.....	92,306	404	·00438	40·21	83.....	20,226	2,595	·12829	5·08
32.....	91,902	414	·00450	39·39	84.....	17,631	2,484	·14088	4·76
33.....	91,488	427	·00467	38·56					
34.....	91,061	446	·00490	37·74	85.....	15,147	2,339	·15440	4·46
					86.....	12,808	2,157	·16842	4·18
35.....	90,615	466	·00514	36·92	87.....	10,651	1,944	·18252	3·92
36.....	90,149	484	·00537	36·11	88.....	8,707	1,714	·19680	3·69
37.....	89,665	497	·00554	35·30	89.....	6,993	1,478	·21134	3·47
38.....	89,168	502	·00563	34·50					
39.....	88,666	502	·00566	33·69	90.....	5,515	1,248	·22626	3·26
					91.....	4,267	1,031	·24164	3·07
40.....	88,164	501	·00568	32·88	92.....	3,236	834	·25758	2·89
41.....	87,663	501	·00572	32·06	93.....	2,402	659	·27418	2·72
42.....	87,162	508	·00583	31·25	94.....	1,743	508	·29153	2·56
43.....	86,654	519	·00599	30·43					
44.....	86,135	531	·00617	29·61	95.....	1,235	383	·30973	2·40
					96.....	852	280	·32888	2·26
45.....	85,604	548	·00640	28·79	97.....	572	200	·34906	2·12
46.....	85,056	569	·00669	27·97	98.....	372	138	·37039	1·99
47.....	84,487	598	·00708	27·15	99.....	234	92	·39294	1·86
48.....	83,889	635	·00757	26·34					
49.....	83,254	680	·00817	25·54	100.....	142	59	·41683	1·74
					101.....	83	37	·44214	1·62
50.....	82,574	729	·00883	24·75	102.....	46	22	·46897	1·51
51.....	81,845	778	·00951	23·96	103.....	24	12	·49743	1·41
52.....	81,067	824	·01017	23·19	104.....	12	6	·52759	1·31
53.....	80,243	864	·01077	22·42					
54.....	79,379	899	·01132	21·66	105.....	6	3	·55957	1·21
					106.....	3	2	·59345	1·11
55.....	78,480	935	·01191	20·90	107.....	1	1	·62933	1·01
56.....	77,545	976	·01258	20·15					

[1] Canada excluding Quebec, Yukon and the Northwest Territories.

TABLE 9. Life Tables, (A) Males, (B) Females, based on population and deaths of the Registration Area of 1921[1] in each of the years 1921 and 1931—Con.

Age x	(A) Males				Age x	(A) Males			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
				1931					
5.....	100,000	210	·00210	63·17	56.....	80,209	1,111	·01385	19·56
6.....	99,790	198	·00198	62·30	57.....	79,098	1,183	·01495	18·83
7.....	99,592	182	·00183	61·42	58.....	77,915	1,253	·01608	18·11
8.....	99,410	166	·00167	60·53	59.....	76,662	1,322	·01724	17·39
9.....	99,244	151	·00152	59·63	60.....	75,340	1,394	·01850	16·69
10.....	99,093	139	·00140	58·72	61.....	73,946	1,476	·01996	16·00
11.....	98,954	132	·00133	57·81	62.....	72,470	1,573	·02170	15·31
12.....	98,822	132	·00134	56·88	63.....	70,897	1,682	·02373	14·64
13.....	98,690	142	·00144	55·96	64.....	69,215	1,798	·02597	13·98
14.....	98,548	161	·00163	55·04	65.....	67,417	1,918	·02845	13·34
15.....	98,387	184	·00187	54·13	66.....	65,499	2,041	·03116	12·72
16.....	98,203	207	·00211	53·23	67.....	63,458	2,165	·03412	12·11
17.....	97,996	226	·00231	52·34	68.....	61,293	2,281	·03722	11·52
18.....	97,770	241	·00247	51·46	69.....	59,012	2,387	·04045	10·95
19.....	97,529	256	·00262	50·59	70.....	56,625	2,490	·04397	10·39
20.....	97,273	268	·00276	49·72	71.....	54,135	2,596	·04796	9·84
21.....	97,005	279	·00288	48·85	72.....	51,539	2,709	·05256	9·31
22.....	96,726	289	·00299	47·99	73.....	48,830	2,819	·05774	8·80
23.....	96,437	297	·00308	47·14	74.....	46,011	2,917	·06339	8·31
24.....	96,140	302	·00314	46·28	75.....	43,094	2,998	·06958	7·84
25.....	95,838	307	·00320	45·42	76.....	40,096	3,061	·07635	7·39
26.....	95,531	310	·00324	44·57	77.....	37,035	3,103	·08378	6·96
27.....	95,221	312	·00328	43·71	78.....	33,932	3,117	·09186	6·55
28.....	94,909	315	·00332	42·85	79.....	30,815	3,099	·10056	6·16
29.....	94,594	316	·00334	41·99	80.....	27,716	3,045	·10987	5·79
30.....	94,278	317	·00336	41·13	81.....	24,671	2,955	·11977	5·45
31.....	93,961	319	·00339	40·27	82.....	21,716	2,829	·13025	5·12
32.....	93,642	321	·00343	39·41	83.....	18,887	2,668	·14126	4·81
33.....	93,321	327	·00350	38·54	84.....	16,219	2,478	·15281	4·52
34.....	92,994	332	·00357	37·67	85.....	13,741	2,267	·16497	4·25
35.....	92,662	339	·00366	36·81	86.....	11,474	2,040	·17783	3·99
36.....	92,323	348	·00377	35·94	87.....	9,434	1,806	·19147	3·74
37.....	91,975	361	·00392	35·07	88.....	7,628	1,571	·20592	3·51
38.....	91,614	376	·00410	34·21	89.....	6,057	1,340	·22120	3·29
39.....	91,238	393	·00431	33·35	90.....	4,717	1,120	·23734	3·09
40.....	90,845	412	·00454	32·49	91.....	3,597	915	·25437	2·89
41.....	90,433	434	·00480	31·64	92.....	2,682	730	·27232	2·71
42.....	89,999	457	·00508	30·79	93.....	1,952	568	·29121	2·54
43.....	89,542	481	·00537	29·94	94.....	1,384	431	·31106	2·38
44.....	89,061	503	·00565	29·10	95.....	953	316	·33192	2·22
45.....	88,558	530	·00598	28·26	96.....	637	225	·35380	2·08
46.....	88,028	559	·00635	27·43	97.....	412	155	·37673	1·94
47.....	87,469	597	·00682	26·60	98.....	257	103	·40073	1·82
48.....	86,872	639	·00736	25·78	99.....	154	66	·42585	1·70
49.....	86,233	688	·00798	24·97	100.....	88	40	·45209	1·58
50.....	85,545	742	·00867	24·17	101.....	48	23	·47949	1·48
51.....	84,803	798	·00941	23·37	102.....	25	13	·50808	1·38
52.....	84,005	857	·01020	22·59	103.....	12	6	·53789	1·28
53.....	83,148	917	·01103	21·82	104.....	6	3	·56893	1·19
54.....	82,231	979	·01190	21·06	105.....	3	2	·60124	1·11
55.....	81,252	1,043	·01284	20·30	106.....	1	1	·63485	1·03

TABLE 9. Life Tables, (A) Males, (B) Females, based on population and deaths of the Registration Area of 1921[1] in each of the years 1921 and 1931—Con.

Age x	(B) Females				Age x	(B) Females			
	l_x	d_x	q_x	$\mathring{e}_x$		l_x	d_x	q_x	$\mathring{e}_x$
			1931						
5.....	100,000	173	·00173	64·58	57.....	80,950	1,035	·01279	19·80
6.....	99,827	145	·00145	63·69	58.....	79,915	1,114	·01394	19·05
7.....	99,682	127	·00127	62·78	59.....	78,801	1,196	·01518	18·31
8.....	99,555	116	·00117	61·86					
9.....	99,439	113	·00114	60·94	60.....	77,605	1,281	·01651	17·59
					61.....	76,324	1,369	·01794	16·87
10.....	99,326	116	·00117	60·00	62.....	74,955	1,459	·01947	16·17
11.....	99,210	121	·00122	59·07	63.....	73,496	1,543	·02100	15·48
12.....	99,089	128	·00129	58·15	64.....	71,953	1,622	·02254	14·80
13.....	98,961	135	·00136	57·22					
14.....	98,826	144	·00146	56·30	65.....	70,331	1,703	·02422	14·13
					66.....	68,628	1,797	·02619	13·47
15.....	98,682	155	·00157	55·38	67.....	66,831	1,911	·02860	12·82
16.....	98,527	168	·00171	54·47	68.....	64,920	2,034	·03133	12·18
17.....	98,359	183	·00186	53·56	69.....	62,886	2,154	·03426	11·56
18.....	98,176	201	·00205	52·66					
19.....	97,975	223	·00228	51·76	70.....	60,732	2,284	·03760	10·96
					71.....	58,448	2,428	·04154	10·36
20.....	97,752	246	·00252	50·88	72.....	56,020	2,593	·04628	9·79
21.....	97,506	267	·00274	50·01	73.....	53,427	2,778	·05200	9·24
22.....	97,239	283	·00291	49·14	74.....	50,649	2,967	·05857	8·72
23.....	96,956	293	·00302	48·29					
24.....	96,663	299	·00309	47·43	75.....	47,682	3,134	·06572	8·23
					76.....	44,548	3,259	·07316	7·78
25.....	96,364	304	·00315	46·58	77.....	41,289	3,330	·08064	7·35
26.....	96,060	306	·00319	45·72	78.....	37,959	3,341	·08801	6·95
27.....	95,754	310	·00324	44·87	79.....	34,618	3,305	·09547	6·58
28.....	95,444	314	·00329	44·01					
29.....	95,130	317	·00333	43·15	80.....	31,313	3,232	·10320	6·22
					81.....	28,081	3,128	·11140	5·87
30.....	94,813	320	·00337	42·30	82.....	24,953	3,001	·12027	5·55
31.....	94,493	324	·00343	41·44	83.....	21,952	2,851	·12987	5·24
32.....	94,169	332	·00353	40·58	84.....	19,101	2,676	·14008	4·95
33.....	93,837	347	·00370	39·72					
34.....	93,490	366	·00391	38·87	85.....	16,425	2,477	·15080	4·67
					86.....	13,948	2,258	·16191	4·41
35.....	93,124	386	·00414	38·02	87.....	11,690	2,026	·17332	4·17
36.....	92,738	402	·00434	37·17	88.....	9,664	1,789	·18512	3·93
37.....	92,336	413	·00447	36·33	89.....	7,875	1,555	·19742	3·71
38.....	91,923	412	·00448	35·49					
39.....	91,511	403	·00440	34·65	90.....	6,320	1,329	·21030	3·50
					91.....	4,991	1,117	·22386	3·30
40.....	91,108	392	·00430	33·80	92.....	3,874	923	·23819	3·11
41.....	90,716	386	·00426	32·95	93.....	2,951	748	·25340	2·93
42.....	90,330	392	·00434	32·09	94.....	2,203	594	·26956	2·76
43.....	89,938	412	·00458	31·22					
44.....	89,526	440	·00491	30·36	95.....	1,609	461	·28679	2·59
					96.....	1,148	350	·30517	2·43
45.....	89,086	473	·00531	29·51	97.....	798	259	·32480	2·27
46.....	88,613	509	·00574	28·67	98.....	539	186	·34578	2·13
47.....	88,104	543	·00616	27·83	99.....	353	130	·36819	1·99
48.....	87,561	573	·00654	27·00					
49.....	86,988	600	·00690	26·17	100.....	223	87	·39214	1·85
					101.....	136	57	·41772	1·72
50.....	86,388	629	·00728	25·35	102.....	79	35	·44502	1·60
51.....	85,759	665	·00775	24·53	103.....	44	21	·47414	1·49
52.....	85,094	709	·00833	23·72	104.....	23	12	·50518	1·37
53.....	84,385	763	·00904	22·92					
54.....	83,622	823	·00984	22·12	105.....	11	6	·53822	1·27
					106.....	5	3	·57337	1·16
55.....	82,799	889	·01074	21·34	107.....	2	1	·61071	1·05
56.....	81,910	960	·01172	20·56	108.....	1	1	·65035	·90

TABLE 10. Probabilities of dying within one year, (A) Males, (B) Females, based on population and deaths of the Registration Area of 1921 for the decennium 1921 to 1931

Age x	q_x		Age x	q_x	
	(A) Males	(B) Females		(A) Males	(B) Females
5	·00278	·00249	53	·01058	·00984
6	·00255	·00221	54	·01160	·01064
7	·00234	·00198			
8	·00215	·00181	55	·01272	·01153
9	·00200	·00169	56	·01393	·01250
			57	·01520	·01356
10	·00190	·00163	58	·01645	·01465
11	·00185	·00162	59	·01769	·01576
12	·00186	·00165			
13	·00195	·00173	60	·01905	·01699
14	·00211	·00186	61	·02064	·01841
			62	·02256	·02010
15	·00232	·00203	63	·02485	·02206
16	·00252	·00222	64	·02743	·02425
17	·00270	·00240			
18	·00285	·00259	65	·03026	·02665
19	·00300	·00280	66	·03329	·02925
			67	·03649	·03204
20	·00313	·00301	68	·03968	·03485
21	·00325	·00320	69	·04290	·03768
22	·00334	·00336			
23	·00339	·00347	70	·04640	·04079
24	·00342	·00354	71	·05042	·04444
			72	·05522	·04888
25	·00342	·00359	73	·06085	·05415
26	·00342	·00364	74	·06714	·06009
27	·00343	·00370			
28	·00343	·00377	75	·07401	·06662
29	·00341	·00383	76	·08139	·07368
			77	·08920	·08119
30	·00339	·00390	78	·09735	·08909
31	·00341	·00399	79	·10589	·09743
32	·00347	·00410			
33	·00359	·00425	80	·11496	·10631
34	·00376	·00442	81	·12468	·11582
			82	·13519	·12607
35	·00395	·00461	83	·14632	·13712
36	·00416	·00479	84	·15798	·14890
37	·00437	·00495			
38	·00457	·00507	85	·17043	·16132
39	·00478	·00515	86	·18389	·17429
			87	·19861	·18773
40	·00500	·00524	88	·21474	·20156
41	·00524	·00535	89	·23209	·21586
42	·00550	·00552			
43	·00578	·00575	90	·25046	·23072
44	·00608	·00602	91	·26966	·24622
			92	·28950	·26243
45	·00639	·00633	93	·30978	·27944
46	·00674	·00667	94	·33032	·29734
47	·00714	·00702			
48	·00755	·00737	95	·35091	·31620
49	·00796	·00771	96	·37136	·33611
			97	·39149	·35715
50	·00842	·00810	98	·41109	·37940
51	·00899	·00856	99	·42998	·40294
52	·00970	·00914	100	·44796	·42785

APPENDIX

POPULATION AND DEATHS ON WHICH PRECEDING TABLES ARE BASED

TABLE A.—POPULATION, BY QUINQUENNIAL AGE GROUPS AND SEX, CANADA AND REGIONAL DIVISIONS, 1031

Age Group	Canada[1]	Maritime Provinces	Quebec	Ontario	Prairie Provinces	British Columbia
MALES						
All ages	5,366,502	517,116	1,447,124	1,748,844	1,268,199	385,219
0- 4	542,204	55,581	177,556	156,121	126,884	26,152
5- 9	571,671	59,428	178,150	168,734	135,275	30,084
10-14	542,102	57,208	158,149	161,623	135,032	30,180
15-10	524,607	53,957	147,539	163,315	127,901	31,805
20-24	463,120	44,308	130,733	147,669	111,355	29,055
25-29	409,412	33,066	113,135	135,898	98,500	28,813
30-34	367,576	29,681	98,202	128,750	84,656	26,287
35-39	358,582	30,366	89,145	125,702	85,789	27,580
40-44	347,251	27,391	78,682	117,980	89,823	33,375
45-49	321,058	26,195	68,676	108,017	83,697	34,473
50-54	266,861	23,936	57,900	91,564	64,652	28,809
55-59	198,760	19,854	45,081	70,273	43,570	10,982
60-64	156,529	17,470	35,208	57,740	30,806	15,215
65-69	120,473	14,321	27,399	46,210	22,270	10,273
70-74	88,454	11,077	20,218	35,370	15,250	6,539
75-79	49,968	7,183	12,040	19,702	7,602	3,351
80-84	23,853	3,833	6,132	9,281	3,236	1,371
85-89	8,660	1,605	2,116	3,400	1,137	402
90-94	2,048	418	510	810	216	94
95-99	417	96	08	148	57	18
100 and over	74	15	8	22	21	8
Not stated	2,642	127	357	515	290	1,353
FEMALES						
All ages	4,996,331	491,987	1,427,131	1,682,839	1,085,330	309,044
0- 4	530,436	54,409	175,339	151,548	123,313	25,827
5- 9	559,373	57,635	175,693	164,208	132,772	29,065
10-14	530,455	55,543	157,660	156,634	130,975	29,643
15-19	513,756	51,095	152,319	155,573	124,228	30,541
20-24	447,001	40,367	136,383	143,512	99,997	26,742
25-29	375,882	31,845	113,287	128,780	70,342	22,628
30-34	340,249	29,121	95,976	123,383	70,129	21,640
35-39	329,012	29,435	84,923	120,947	70,716	22,991
40-44	298,019	25,642	74,005	110,565	65,069	22,738
45-49	263,411	24,085	62,960	98,114	56,630	21,613
50-54	221,133	21,235	52,720	86,065	43,222	17,801
55-59	167,708	17,876	41,894	66,817	28,807	12,314
60-64	137,558	15,503	34,002	57,186	21,569	0,298
65-69	110,380	13,413	27,304	46,501	16,230	6,932
70-74	82,980	10,254	20,135	36,209	11,644	4,738
75-79	48,591	7,177	12,375	20,282	6,280	2,477
80-84	25,277	4,237	6,581	10,470	2,796	1,193
85-89	10,460	2,159	2,471	4,295	1,072	463
90-94	2,880	705	658	1,116	277	124
95-99	655	164	139	250	79	23
100 and over	89	25	14	28	16	6
Not stated	1,026	62	293	358	158	157

[1] Excluding Yukon and the Northwest Territories.

TABLE B.—REGISTERED DEATHS, BY QUINQUENNIAL AGE GROUPS AND SEX, CANADA AND REGIONAL DIVISIONS, 1930-32

Age Group	Canada[1]	Maritime Provinces	Quebec	Ontario	Prairie Provinces	British Columbia
MALES						
All ages	171,791	18,627	54,165	58,160	29,366	11,473
0- 4	42,486	4,197	19,794	9,885	7,422	1,188
5- 9	3,896	375	1,486	1,095	712	228
10-14	2,581	259	852	739	592	148
15-19	3,975	479	1,252	1,146	827	271
20-24	4,603	532	1,529	1,333	864	354
25-29	4,165	424	1,259	1,337	794	360
30-34	3,911	369	1,219	1,329	668	335
35-39	4,715	438	1,387	1,605	874	411
40-44	5,675	459	1,671	1,947	1,139	568
45-49	6,936	559	1,689	2,,21	1,487	789
50-54	8,508	752	2,128	3,909	1,655	964
55-59	9,286	687	2,281	3,446	1,759	943
60-64	10,843	1,077	2,685	4,298	1,869	1,913
65-69	13,088	1,467	3,201	5,238	2,131	1,951
70-74	15,983	1,711	3,679	2,621	2,388	1,944
75-79	13,726	1,737	3,591	5,724	1,929	844
80-84	19,188	1,538	2,655	4,112	1,394	579
85-89	5,559	925	1,422	2,312	661	239
90-94	1,916	358	464	817	192	85
95-99	449	87	105	180	53	15
100 and over	99	14	19	39	17	10
Not stated	211	22	23	76	47	43
FEMALES						
All ages	146,409	16,819	49,355	51,327	21,717	7,191
0- 4	33,935	3,299	15,419	7,685	5,683	949
5- 9	2,938	279	1,266	665	558	170
10-14	2,434	245	934	586	502	167
15-19	3,639	422	1,448	871	662	227
20-24	4,399	528	1,685	1,185	755	246
25-29	4,329	478	1,685	1,209	694	263
30-34	4,202	419	1,569	1,276	705	233
35-39	4,714	496	1,536	1,572	828	282
40-44	4,891	448	1,585	1,629	926	312
45-49	4,949	512	1,601	1,983	910	493
50-54	6,142	589	1,659	2,416	1,954	424
55-59	6,903	719	1,885	2,840	1,007	452
60-64	8,422	901	2,386	3,494	1,199	532
65-69	10,474	1,158	2,835	4,506	1,386	589
70-74	12,519	1,492	3,365	5,519	1,625	599
75-79	12,299	1,551	3,317	5,452	1,492	568
80-84	10,199	1,496	2,794	4,385	1,041	393
85-89	2,263	1,129	1,637	2,673	564	269
90-94	2,472	535	581	1,954	212	99
95-99	790	185	146	279	69	21
100 and over	113	27	19	42	17	8
Not stated	39	1	3	15	8	3

[1] Excluding Yukon and the Northwest Territories.

TABLE C.—POPULATION AND REGISTERED DEATHS, BY QUINQUENNIAL AGE GROUPS AND SEX, 1921 AND 1931, REGISTRATION AREA[1] OF 1921

Age Group	1931				1921				1921-1031	
	Population		Deaths		Population		Deaths		Deaths[2]	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
All ages	3,919,378	3,569,200	38,462	31,568	3,342,069	3,072,170	36,411	31,311	759,385	644,935
0- 4	364,738	355,097	7,629	5,042	374,517	365,321	10,827	8,303	178,292	139,807
5- 9	393,521	383,680	742	497	375,106	365,797	1,166	970	18,354	15,124
10-14	384,043	372,705	534	489	323,528	314,166	674	611	13,496	11,610
15-19	377,068	361,437	867	677	282,880	275,215	866	741	17,777	15,298
20-24	332,387	310,618	988	894	252,822	255,413	947	946	19,461	18,008
25-29	296,277	262,595	971	851	262,860	249,555	1,043	1,034	19,236	18,975
30-34	269,374	244,273	029	870	265,064	231,673	999	1,040	18,794	19,647
35-39	269,437	244,089	1,064	1,085	269,830	220,812	1,250	1,220	23,616	22,001
40-44	268,569	224,014	1,372	989	224,721	182,440	1,250	1,072	27,224	22,953
45-49	252,382	200,451	1,733	1,238	184,027	149,075	1,340	1,065	31,307	24,637
50-54	208,961	168,413	2,135	1,414	151,774	126,329	1,488	1,287	35,277	27,161
55-59	153,679	125,814	2,306	1,617	113,614	98,637	1,720	1,336	40,772	30,615
60-64	121,231	103,556	2,661	2,033	96,565	83,578	2,111	1,651	49,726	38,080
65-69	93,074	83,076	3,218	2,417	68,022	59,519	2,269	1,972	59,463	46,257
70-74	68,236	62,845	3,657	2,968	44,728	41,348	2,539	2,811	63,714	52,043
75-79	37,928	36,216	3,259	2,986	26,498	26,395	2,368	2,132	59,091	52,234
80-84	17,721	18,696	2,407	2,348	13,630	14,654	1,827	1,706	44,438	44,038
85-89	6,544	7,989	1,339	1,477	5,465	6,197	1,136	1,208	25,639	28,583
90-94	1,538	2,222	455	570	1,331	1,825	361	516	9,150	11,714
95-99	319	516	105	168	326	438	104	148	2,331	3,392
100 and over	66	75	24	29	79	74	37	35	585	684
Not stated	2,285	733	67	9	4,682	3,709	89	29	1,642	454

[1] Canada excluding Quebec, Yukon and the Northwest Territories.
[2] Obtained by adding to the deaths of 1922-1930 inclusive one-half the deaths of 1021 and 1931.

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